OCT 7 1926

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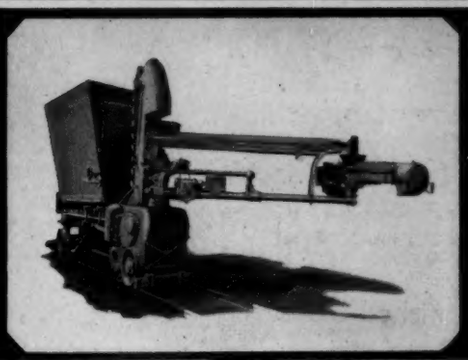
IRON TRADE REVIEW

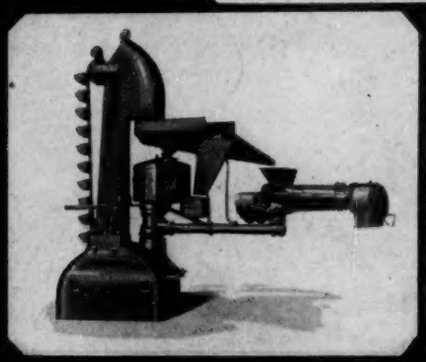
Registered U. S. Patent Office

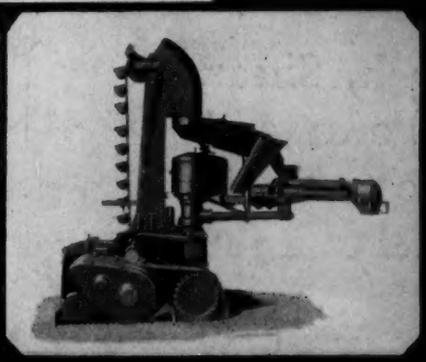
Published Weekly | CLEVELAND, O., OCTOBER 7, 1926 | Six Dollars a Year

VOL. LXXIX No. 15 | Entered as second-class matter at the post-office in Cleveland, Ohio, under the act of March 3, 1879 | Single Copy 25 Cents

SANDSLINGERS







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General (Plate Eng)
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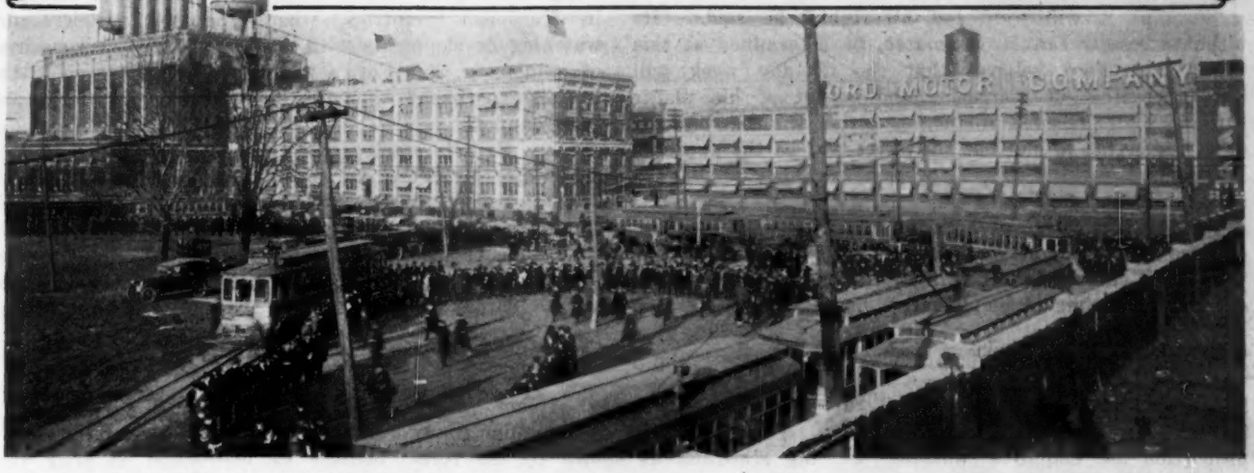
Eyes of Industry on Ford Five-Day Week Experiment

By A. J. Hain



Ford plant at Highland Park, Mich., thousands of workers waiting their turn to board street cars. All this abolished on Saturdays.

HENRY FORD—*"The country is ready for the five-day week. It is bound to come through all industry."*

PROF. THOMAS NIXON CARVER, Harvard economist—*"The multiplication of holidays always is a sign of decadence in any country."*

SIR JOHN CORCORAN, spokesman, Federation of British Industries —*"Ford's case is a special one."*

WILLIAM GREEN, President, American Federation of Labor—*"We paved the way."*

HENRY FORD'S announcement of a five-day week for all his production plants marks a new low point in a steady downward movement in weekly working schedules, through the last quarter century.

With recent output in basic industries near war-time peaks, or making new records, the average full-time hours per week now in effect are the lowest in history, while wages in many instances are double their prewar figures. A graphic illustration of this fact as developed by the government's bureau of labor statistics, particularly pertaining to the iron and steel industry, was presented in the Sept. 23 issue of IRON TRADE REVIEW.

Abandonment of the 12-hour shift in the steel industry in 1923 was one of the notable developments in recent years, more remarkable since it was made when immigration was restricted.

Ford's five-day week does not apply to jobs where processes must be continuous, or to his railroad workers, or watchmen. Some of his men must work Saturdays and Sundays, but they are said to constitute less than 1 per cent of the total working force, which is variously estimated between 150,000 and 200,000. The reduced schedule has been put in effect in about 50 Ford plants.

The last census of manufactures shows a striking decrease in the prevailing hours of work. In 1909 only 7.9 per cent of the employes in American manufacturing industries had a weekly schedule of 48 hours or less; 7.3 per cent were working on schedules calling for 48 to 54 hours, and 84.8 per cent were on schedules of 54 hours or more per week. In 1923 the situation was reversed; 46 per cent of the employes were working 48 hours or less, 30.7 per cent were working 48 to 54 hours, and only 23.3 per cent working 54

What Economists Think of the Five-Day Plan

THE Ford five-day week plan is attracting the attention of economists, who consider it as an experiment, rather than an assured benefit.

"Mr. Ford is a practical man," Prof. William Z. Ripley, of Harvard university, is quoted as saying. "If people are offered an incentive it stands to reason that they will work all the harder."

Prof. Thomas Nixon Carver, of the university's staff of economists, expresses a conservative view:

"Perhaps it will work out all right," he said. "Its ultimate results cannot, of course, be determined at this time. Mr. Ford believes that the five-day week will have the effect of increasing the output of his plants through high pressure production during the five working days. It seems to me that the effect will be the opposite. It stands to reason that a workman cannot accomplish as much in five days as in six.

"The multiplication of holidays always is a sign of decadence in any country. History shows that to be true. There is a current tendency, a rather marked one, toward reducing the time of employment, but I cannot see how this tendency is going to have a desirable effect on industry."

Professor Arthur E. Monroe points to the fact that Ford's industry is not typical, but highly specialized.

"College theorists do not know much about the potentialities of such a proposition," he said. "The man actually engaged in the manufacturing business is the only one who is really an authority on the matter."

The Ford plan also is receiving considerable attention in European countries, where industrial leaders are watching developments with much interest. The consensus of opinion is that Ford's position is a special one; that he can experiment when the average manufacturing company cannot.

"The British employers have not the money to pay the wages Mr. Ford can pay on an economic basis," Sir John Corcoran, director of the National Union of Manufacturers, is quoted as saying to the *New York Times*. "We have to meet unprotected competition in our many great industries, and he does not have this to contend with. In that lies the truth of the matter."

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hours or more per week. Since 1923 the tendency has been to increase the proportion of employes working 48 hours or less per week.

In iron and steel plants in 1923 the proportion of those working 48 hours or less was 34.8 per cent; those working 48 to 54 hours constituted 26.4 per cent and those working 54 hours or more per week made up 38.8 per cent of the total. The industry in that year began to abolish the 12-hour shift, and the effect was not fully reflected in the census report.

In foundries and machine shops 29.9 per cent of the workers in 1923 were on schedules of 48 hours or less per week; 47.2 per cent were working 48 to 54 hours per week and only 22.9 per cent were working over 54 hours. The census showed that in the automobile industry 41 per cent of the employes were on a weekly basis of 48 hours or less; 49.5 per cent on 48 to 54 hours and 9.57 per cent were working more than 54 hours per week.

In July 1914 the average full-time work week in 25 manufacturing industries was 55 hours, according to the National Industrial Conference board. By 1920 the average had declined to 50 hours, and it has remained near that point ever since.

During the first quarter of 1926 the average work week for all male wage earners in the 25 industries surveyed by the conference board was 49.5 hours. This compares with 40 hours per week now in effect in plants operated by Henry Ford.

A distinction between regular working schedules as shown by the foregoing figures, and employment or actual hours of work as influenced by production requirements must be considered. Total employment has been maintaining an unusually stable level since industry emerged from its depression in 1924. In a recent article in *The Saturday Evening Post*, E. G. Grace, president, Bethlehem Steel Co., comments on this fact, and says it is largely due to the generally steadying influence of "hand-to-mouth buying."

The question has been raised as to whether the Ford five-day week represents a permanent change, or has followed a reduction in sales of Ford automobiles, while some of the competitors have enlarged their output.

Per Capita Output Increasing

As far back as dependable records are available the trend of employment has closely paralleled that of production. This was accepted as natural, on the assumption that a given labor force was necessary to produce a certain output. From 1900 to 1914 the relationship was striking, but during the last decade, and particularly in the last two or three years, a change has come. The general average of manufacturing production has been rising, but the average industrial employment has failed to keep pace.

According to the conference board's studies, the first definite evidence of materially increased per capita production was noticeable in 1923. Indications in 1924 were inconclusive because of depression in that year, but in 1925 the evidence became so clear as to set at rest any doubts. With production rising and remaining well above 1924 levels, no corresponding increase in employment occurred.

Average production for the year, 1925, was 10.8 per cent higher than in 1924, according to the department of commerce, and yet employment showed no corresponding increase. The conference board's figures indicate that industrial employment in 1925 averaged only 3 per cent higher than in 1924, while figures computed by the bureau of labor statistics show even less increase. In other words, 10 per cent greater production was accomplished with a hardly perceptible increase in man power.

The high rate of production continued into the early months of 1926, but at the same time a marked increase in employment was noticeable. The inference is that up to a certain point industry has made it possible through greater operating efficiency to increase production without a commensurate increase in man power, but that when this point has been reached further production increases can be accomplished only by an increase in employment relatively greater than in the early stages of expansion.

This experience suggests that Ford's five-hour day has not received its real test. But having committed him-

self to the five-day week the schedule probably will be adhered to; the needs of increasing production can be met largely with employment of additional men. He believes in working his machines to the limit, while conserving the human element. He is in favorable position to accomplish his object as he has control over his working forces. The five-day week in some industries dominated by trade unions, with arbitrary restrictions on production, might prove disastrous.

Certain leaders in the American Federation of Labor have been persistent in their efforts for a five-day week, and now have seized on the Ford experiment as an argument.

Such proposals have been part of demands made in the building trades in Cleveland and elsewhere, and have led to strikes. The painters' union in Cleveland was on strike for several months early this year, for a five-day week, and an increase in wages, and the union was defeated. The increase in wages would have offset the loss of four hours work for them each week. Wherever the demand has been made for a reduction from 44 hours to 40 per week in the building trades, it has been accompanied with a request for more money. This assumes that the union members would do as much in 40 hours as they formerly accomplished in 44, something which employers contend is impossible under the trades union system.

In the metal trades, where labor relations have been peaceful for several years, the week's schedule is 52 to 54 hours. In foundries the week generally is 44 to 48 hours. The average for all wage earners in Class I railroads is 49.5 hours, having been reduced 10 hours a week in the span of ten years.

Ford's announcement of a minimum wage of $5 for his eight-hour day workmen 12 years ago created a sensation. At that time the general wage for similar work was $2.50 to $3. Ford was criticized for "demoralizing" the labor market. Tens of thousands of workmen flocked to Detroit to get jobs.

The new announcement of a five-day week does not carry as clear a statement with respect to wages. They are to be adjusted according to individual merit. If Ford pays as much for five days work as he formerly did for six the effect would be similar to increasing wages 16 per cent.

The *St. Louis Globe-Democrat* of Sept. 26 carries a copyright article accrediting to Ford a long statement regarding his policies.

"Does this mean?" he was asked, "that your present minimum wage of $6 a day will become a fraction over $7 a day—that is, the minimum for five days' work will still be $36, just as it was for six days?"

"We are now working out the wage schedules," Ford is quoted as saying. "We have stopped thinking in terms of minimum wage. That belongs to yesterday before we quite knew what paying high wages meant. Now so few people get the minimum wage that we do not bother about it at all. We try to pay a man what he is worth."

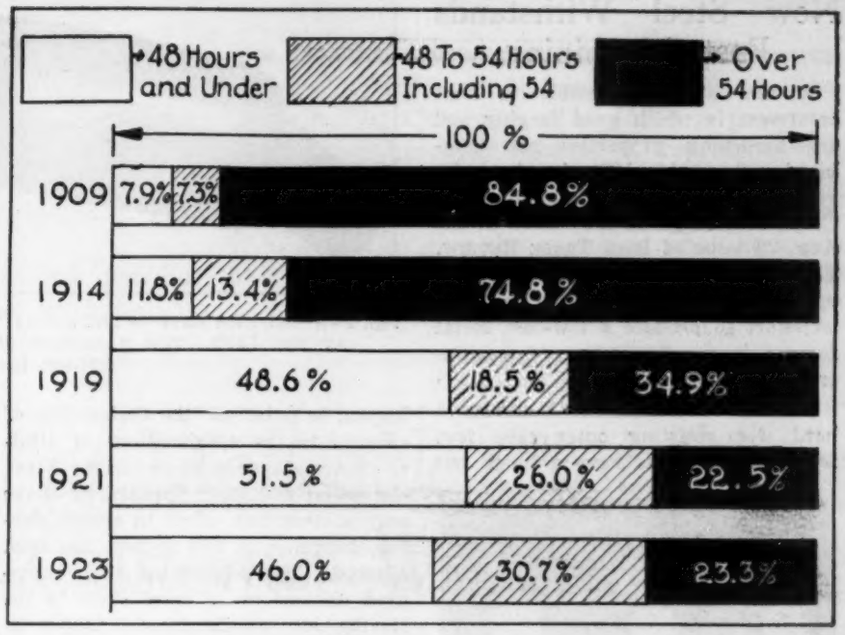
Ford is quoted further as saying: "The country is ready for the five-day week. It is bound to come through all industry. The short week is bound to come because without it the country will not be able to absorb its production and stay prosperous.

"The harder we crowd business for time, the more efficient it becomes. The more well-paid leisure workmen get, the greater becomes their wants.

"The industry of the country could not long exist if factories generally went back to the ten-hour day, because the people would not have time to consume the goods produced.

"Just as the eight-hour day opened our way to prosperity so the five-day week will open our way to still greater prosperity.

"Twenty years ago introducing the five-day week generally would have made for poverty and not for wealth. Five years ago introducing the five-day week would have had the same result. The hours of labor are regulated by the organization of work and by nothing else. It is the rise of the great corporation with its ability to use power, to use accurately designed machinery and generally to lessen the wastes of time, material and human energy that made it possible to bring in the eight-hour day. Further progress along the same lines has made it possible to bring in the five-day week. The progression has been a natural one."



DECREASE IN LENGTH OF WORKING WEEK, AS SHOWN BY UNITED STATES CENSUS OF MANUFACTURES

Builds Largest Single-Cylinder Generator

What is claimed to be the world's largest single-cylinder, single-flow steam turbine, rated at 63,000 kilowatts, or 84,000 horsepower, is being built by the General Electric Co., Schenectady, N. Y., for the Edison Electric Illuminating Co., Boston. It is to be installed in the new Edgar generating station of the company at Weymouth.

The machine will operate at 350 pounds steam pressure and 725 degrees Fahr., with exhaust pressure at 1-inch absolute. It will drive a 60,000-kilowatt main generator and a 3000-kilowatt auxiliary service generator. Generation will be at 14,000 volts and 60 cycles, at 1800 revolutions per minute.

Carnegie Steel Co. is asking federal permission to make a change in the channel of the Mahoning river 2½ miles north of the Trumbull and Mahoning county line in Liberty and Weathersfield townships, Trumbull county, Ohio, 27.4 miles above the mouth of the river.

New Steel Withstands Fast Machining

A new steel susceptible to heat treatment in which good forging and case-hardening properties are combined with machinability has been developed by the Jones & Laughlin Steel Corp., Pittsburgh as mentioned in the Aug. 26 issue of IRON TRADE REVIEW, The new steel is manufactured by the open-hearth process and is a result of an effort to produce a low-cost metal for use in the fabrication of machinery.

The new metal is said to develop a hard wear-resisting outer case free from soft spots, to have a tough but

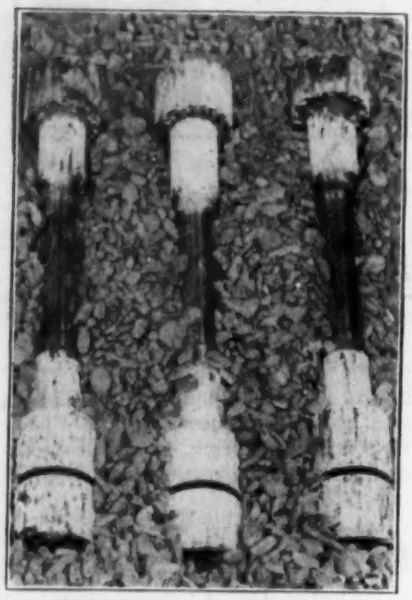


FIG. 1—SAMPLES OF NEW STEEL IMBEDDED IN CARBURIZING COMPOUND

ductile inner core, and, to withstand fast machining. The new steel is applicable to moving parts or other parts subjected to wear, repeated shocks and high stresses such as airplanes, motor cars, trucks, household machines, and machinery in the printing, textile, railroad, woodworking, chemical, glass, and mining industries, etc. In the automotive industry its application includes all machined and forged parts, bolts, transmission spline shafts, chains, valve stems, etc. Samples of the steel imbedded in a carburizing compound are shown in Fig. 1. In Fig. 2 the specimen at the right shows a uniform case; at the left a fibrous structure; and at the center, a hard case and ductile core.

Reports on Sieve Tests

A bulletin entitled "A Study of Sieve Specifications" has been issued by the bureau of standards, Washington, to point out the desirability of changes in the specifications of United States standard sieve series. Since the wire diameter appears to have only a secondary effect in actual sieving, tolerance in this respect has been allowed. The relation of other measured dimensions of sieve cloth to the sieving also is discussed. Copies of this bulletin may be obtained for five cents each from the government printing office, Washington.

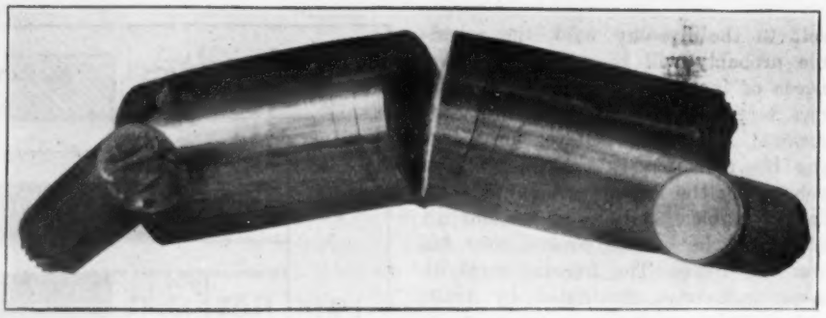


FIG. 2—A UNIFORM CASE IS SHOWN AT THE RIGHT AND THE FIBROUS STRUCTURE AT THE LEFT. THE HARDNESS OF CASE AND DUCTILITY OF CORE IS SHOWN IN THE CENTER

Issues List of Products

The Underwriters' Laboratories, maintained by the National Board of Fire Underwriters, Chicago has issued recently a list of inspected gas, oil and miscellaneous appliances. For convenient reference an alphabetical arrangement has been followed throughout in compiling the list, each product is followed by the name of its manufacturer. Appliances and materials which have been investigated for fire hazard are preceded in the list by the word "Fire", an those investigated for both fire and accident are so indicated. Data regarding acetylene generators, gasoline pumps and oil burners comprise the greater part of the booklet.

Urges Contract Buying of Coal Supplies

A severe winter would cause a coal shortage and high prices, L. W. Wallace of Washington, executive secretary of the American Engineering council, declares in a statement urging the public to heed the advice of engineers and resort to storage. A nationwide survey by a committee of the council headed by W. L. Abbott, Chicago, president of the American Society of Mechanical Engineers, showed, according to Mr. Wallace, that famine conditions could be eliminated if consumers seasonally stored coal.

The coal storage committee of the American Engineering council after an exhaustive investigation in which more than four hundred engineers in leading industrial centers took part, has recommended and urged that all coal consumers purchase their coal on annual contracts for yearly requirements with a provision that the coal be delivered monthly in equal allotments. The committee further urges that consumers provide necessary storage facilities to meet the terms of such contracts.

The purchase of coal on this basis should result in both definite production schedules and lower prices.

Furnace Campaign Ends

Blast furnace "B" of the Mayville Iron Co., Mayville, Wis., subsidiary of the Youngstown Sheet & Tube Co., Youngstown, O., recently was blown out after being in continuous operation for over seven years, during which period approximately 1,000,000 tons of iron was produced. The stack now is being remodeled and enlarged and provided with new gas-cleaning equipment, electric bell rigs, etc. Arthur G. McKee & Co., Cleveland have been awarded the contract for the new construction.

Set Date for Loan Hearing

A hearing on the application of the receiver of the Hadfield-Penfield Steel Co., Bucyrus, O., for permission to borrow $250,000 will be held in the United States district court in Cleveland Oct. A receiver was appointed Sept. 17, and the court ordered a continuance of the business to protect creditors. The loan is said to be needed for payment of material, labor, taxes and other expenses.

In the spring of 1863 W. F. Durfee established a well-equipped laboratory in connection with the experimental bessemer steelworks at Wyandotte, Mich., which is believed to have been the first chemical laboratory connected with any steelworks in this country, if not in the world.

AT ONE of the malleable sessions of the convention of the American Foundrymen's association held last week at Detroit, those who attended witnessed the strange spectacle of a group of leading metallurgists discussing malleable from the standpoint of competition with other products.

Their interest in the marketing and distribution phases of their business was prompted, in this instance, by a paper by H. A. Schwartz, manager of research, National Malleable & Steel Castings Co., Cleveland. The paper is presented in abstract herewith because it represents the first important approach to a study of the malleable industry from an angle heretofore neglected. It is a plea to give the customer what he needs and teems with constructive ideas for malleable foundrymen.

What Kind of Malleable Cast Iron Does Customer Want?

By H. A. Schwartz

SINCE 1904 the tensile strength of malleable castings, as measured by the American Society of Testing Materials specifications, has increased from 40,000 pounds per square inch to 50,000 pounds per square inch, and the elongation from 5 per cent to 10 per cent. These changes were in large part motivated from within the malleable foundries, and it may be doubted whether the consuming interests did more than acquiesce in the acceptance of a superior material.

The economic desirability of these changes, irrespective of their cause, may be measured by the degree in which they increased the application of this product in the industries, or permitted a reduction in weight and hence of total cost of existing malleable articles. The author is not disposed to admit on a priori grounds that such economies did necessarily follow.

The inarticulateness of the consuming interests in this regard is regrettable, for a clear recognition by consumer and producer alike, of what properties are desired in a given product, is the first necessity of a satisfactory relationship. Sooner or later, the user's requirements find expression in the form of specifications, formally or tacitly understood, under which he orders, and accepts material.

It would seem axiomatic that no requirement should be so incorporated which does not raise the useful value of the material more than its cost, for otherwise the product will, deservedly or not, fall into disuse.

It seems equally self-evident that only such requirements should be included as are necessary, and sufficient for the description of the properties for which the material is used. Additional needless limitations increase cost without increasing value, and so violate the first principle laid down. Furthermore, it will be agreed, that any tests applied should measure, so far as possible, directly, the actual properties for which the material is valued, and that indirect tests should be employed only when accurately reproducible methods exist for direct measurement.

It will be readily granted that the calculation of the stresses in even a relatively simple casting, and under the simplest of load conditions, is beyond the limits of our present engineering knowledge. Consequently, no engineer is able to define upon a purely academic basis just what requirements will fit a theoretical material for an intended use.

Specifications can not, and should not be set up upon such a foundation. Their requirements are properly to be interpreted as a statement of the quality of a material known by experience to satisfactorily serve its purpose. They then serve as a means of determining whether other lots, purporting to be identical, are of equal quality.

What the Consumer Desires

Malleable castings are an article of manufacture because they possess a combination of strength, ductility, impact and fatigue resistance and machinability, which renders them more useful, cost considered, for certain purposes than their possible substitutes. With certain specialties as exceptions, the consumer desires to buy for a dollar the most he can get of each of these properties.

In what terms shall he describe his wants in order that, upon closing a contract, he may be assured that his minimum expectations will be realized?

He requires assurance that:

The metal, as cast, is of a quality yielding satisfactory physical properties upon anneal.

That each casting is completely annealed.

That each casting is sufficiently sound, mechanically.

From the very fundamentals of malleable metallurgy, these three factors are entirely separate and distinct.

The first is a question involving the individual melting furnace heat as a unit.

The second involves the annealing furnace heat as a unit, and implies a knowledge of the uniformity of heat treatment, throughout a given furnace. This is, perhaps, obtainable only by inspection of individual castings.

The third factor is not a question of metallurgy, or properties of materials, but of foundry practice.

The logical manner of controlling the first variable is by suitable mechanical tests, on a properly annealed specimen from each heat. The second by visual inspection of test lugs from each casting, if these be of fair size. The third by inspection of broken castings, or perhaps, in extremely critical cases, by X-ray examination of finished castings.

It is to be remembered that the form and preparation of the test speci-

men is just as much an essential of a specification as the required values of the physical constants to be measured. Test specimens are purposely prescribed of forms which can be produced with the greatest freedom from mechanical defects. The purpose is to eliminate as variables, all factors except the quality of the metal.

It is not implied in any specification that specimens cut in various ways from masses of material shall be expected to conform to the same standards. With the exception of rolled rods of small cross section, where, from the nature of the case, specimens can be produced with only one location and orientation with respect to the material, it will never be found that the strength of a metallic test bar is independent of the size and location of the test specimen in relation to the object from which it was cut.

The consumer who cuts a specimen from a casting and finds its properties inferior to the requirements of a specification such as that of the A. S. T. M. has not necessarily any cause for complaint, as to the properties of the metal. He may have legitimate grounds for objecting to the soundness, or integrity, of the casting if a harmful shrink is disclosed as the cause of failure, or it may be that the casting is of such size and form that the unit stresses to be expected in the normal specimen can not be equalled. A lack of understanding of these principles is a frequent cause of unjustifiable complaints by the consuming interests.

It is wisely permitted by the present standard specifications that metal rejected as apparently "under-annealed" may be reheat-treated. This follows quite logically from the fact that the metallurgy of the product is a two stage process. While there exist certain broad and definite general relations between the two steps, it would be manifestly unfair to condemn the entire material for a remediable error in the second of the two steps.

How Shall Consumer Describe the Metal Desired?

We are now confronted with the major question of this paper. In what terms shall the consumer describe the metal of which his castings are made, in order that he will secure the most economical combination of the previously enumerated desiderata at reasonable cost and in reasonable time?

It seems self-evident that the use of chemical specifications for a material of engineering construction is not justifiable where the desired properties can be measured and defined. Excluding the very limited applications of ferrous material under circumstances where their chemical behavior determines their suitability for an intended use, there seems very little reason for writing a chemical specification. With very few exceptions, probably fewer than usually realized, the properties demanded of a metal can be accurately described in physical rather than chemical terms.

Importance of Physical Requirements

Chemical specifications are very generally meaningless. For example, prewar specifications for steel products commonly set a maximum sulphur content of 0.05 of a per cent. Extended investigation, motivated by war necessities, has failed to disclose, for most purposes, any decided superiority of such material over an otherwise correct metal containing .06 of a per cent sulphur. Why then, should the nation's industries be burdened with the expense involved in a reduction of the sulphur to the lower limit?

A large and highly reputable automobile manufacturuer has included in his specifications for malleable castings, a *minimum* carbon content. It is known to all of us that the strength and ductility of malleable cast iron vary inversely as the carbon content. Leaving aside the fact that the consumer's *minimum* value comes perilously close to making it impossible to secure his requirements with respect to tensile strength, his chemical requirement operates to reduce the quality of material which may be furnished him under his specifications, by limiting the quality of material which is admissible thereunder.

We are left, with the opportunity of describing quantitatively the physical properties required in a casting. Theoretically, it should be possible to describe, in quantitative terms, all the properties desired in the material to be used for a given purpose. Practically, this is but a vision and far beyond the limitations set by our present engineering knowledge, both with respect to testing, and design.

Even if sufficient knowledge were secured, the execution of a multiplicity of tests would be so wasteful of time and money as to be economically unsound. The problem is then to select one, or at most, a few tests, simple and accurate of execution, which may be considered a measure of conformity of the product to an established standard. The tensile properties of materials have come to be adapted very generally for this purpose, largely because of the relative simplicity of their determination.

Fatigue And Impact Tests

Many engineers have expressed themselves as being uninterested in the tensile strength of the metal in the malleable castings they buy. Strictly speaking, this attitude is justifiable, although they probably are interested in many other properties which are found in metal of satisfactory tensile properties. It is however, incontrovertible that tests regarding the behavior of malleable castings under fatigue or impact would form a much more direct measure of the materials' utility than do static tension tests. The same may be said of any other materials to be used in machine parts or elsewhere, under conditions of variable load.

Tests of this character have not, as yet, been standardized sufficiently to commend them generally as a basis for the acceptance or rejection of a material. They may, however, be expected to grow in favor as they become better understood. It is by no means unlikely that some form of impact test, such as the Charpy, may come into more extended use for various materials in the future.

The Walker wedge test, constituted an attempt in this general direction. It found but little permanent favor because it became evident that the test was not strictly reproducible. This is a criticism of this particular form of test, and of the apparatus for its execution. A sufficiently simple impact test, capable of accurate reproduction, might prove to have great utility.

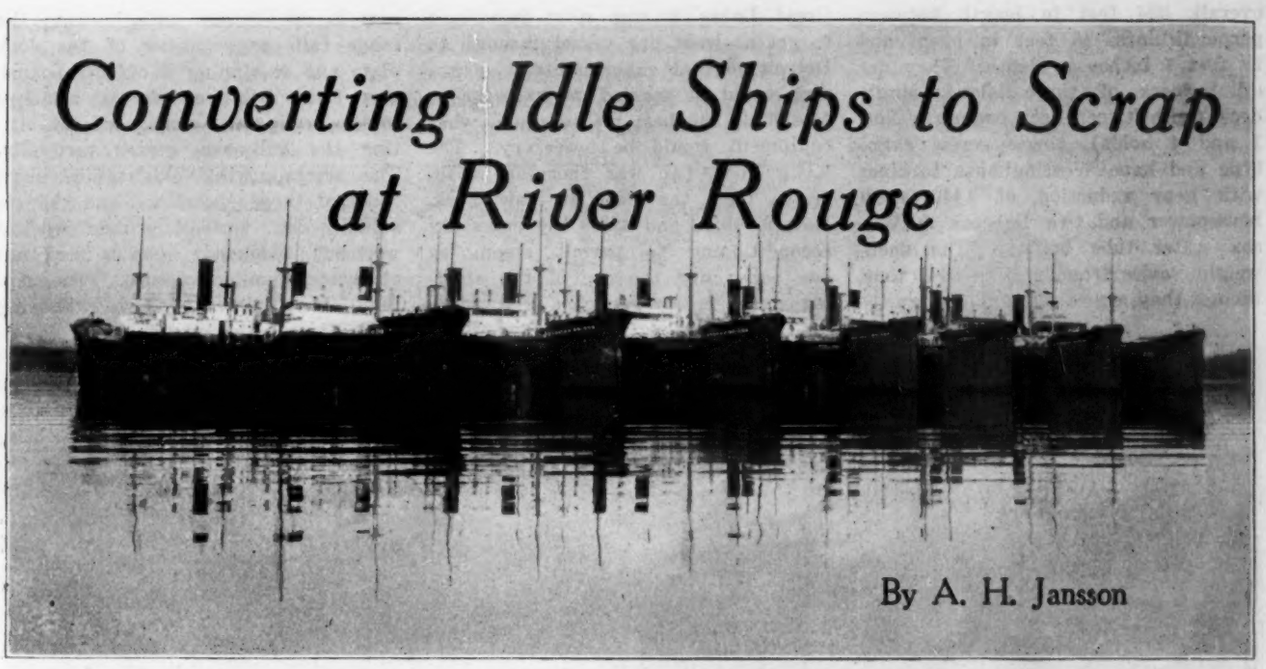
(*To Be Concluded*)

Physical or Chemical Test; Which Is Better?

IT IS the author's carefully considered judgment that there is no defect in the metallurgy of malleable cast iron, against which the consuming interests can not more adequately guard themselves by physical rather than chemical requirements.

Chemical composition is the chief corner stone of works' control, and a knowledge of the chemistry of his processes and products the most useful guide at the command of the producer. The consumer, however, being of necessity not a specialist in any given raw material, is less likely to be sufficiently informed along these lines.
—H. A. SCHWARTZ.

Converting Idle Ships to Scrap at River Rouge



By A. H. Jansson

One Unit of the Laid Up Fleet Anchored in the James River in Virginia

IT IS now more than a year since Henry Ford purchased from the government 199 steel vessels of the laid up emergency. fleet and the salvaging operations are in full swing. The present rapidity of scrapping exceeds the most optimistic predictions in which it was expected to cut up one ship every three days. For the two weeks ending Sept. 15, in ten working days, six complete ships were scrapped.

The purchaser in this case seems happy in his task and entirely contented with his bargain. It is idle in an article of this nature to attempt a psychological analysis but it seems evident that Ford's reward will be one of satisfaction in having accomplished a most difficult and intricate piece of work in a thoroughly workmanlike manner and that as a result he has been able to salvage and put to good use the products of man's mind and labor. It is as if he were satisfying an abhorrence of waste by stepping into the breach and stemming it with the ardor of a crusader, and at the same time perhaps unconsciously driving home a lesson in morals.

Time Limit Specified

A contract executed Aug. 18, 1925, between the United States shipping board and the Ford Motor Co. called for delivery to the latter, on payment of $1,697.470 in cash of 199 steel ships "where is" and "as is" for the purpose of scrapping within a specified time of something less than two years.

Salvages Three Ships Every Five Days

A RETURN to the government of less than one cent on the dollar from the sale of 199 steel vessels of its laid up emergency fleet would hardly strike the average citizen as a brilliant stroke of business. And still that is just what it was for the government. As a result of the sale of these vessels for scrap to Henry Ford, $1,697,470 in actual cash has been recovered into the treasury of the United States and a further considerable sum, equal to the continued cost of caretaking, or sinking or other means of disposal, may rightfully be credited to this undertaking.

In this article, written by A. H. Jansson, editor of Marine Review, Cleveland, is told how Ford prepared to meet his task, how he met it and how he succeeded in scrapping six complete ships in ten working days, a record which appears most remarkable. From June 1 to Sept. 22, 33 vessels were completely scrapped. Twelve are in process of scrapping at all times. It appears that if the present rate of operations continue, it is reasonable to expect that the entire program will be completed by the fall of 1927. These and many other interesting facts are to be found in Mr. Jansson's comprehensive article on the operations at River Rouge.

The hulls had to be scrapped and could not be converted to any navigable use and any machinery salvaged could not be sold and if not scrapped could only be used in conjunction with the purchaser's own enterprises.

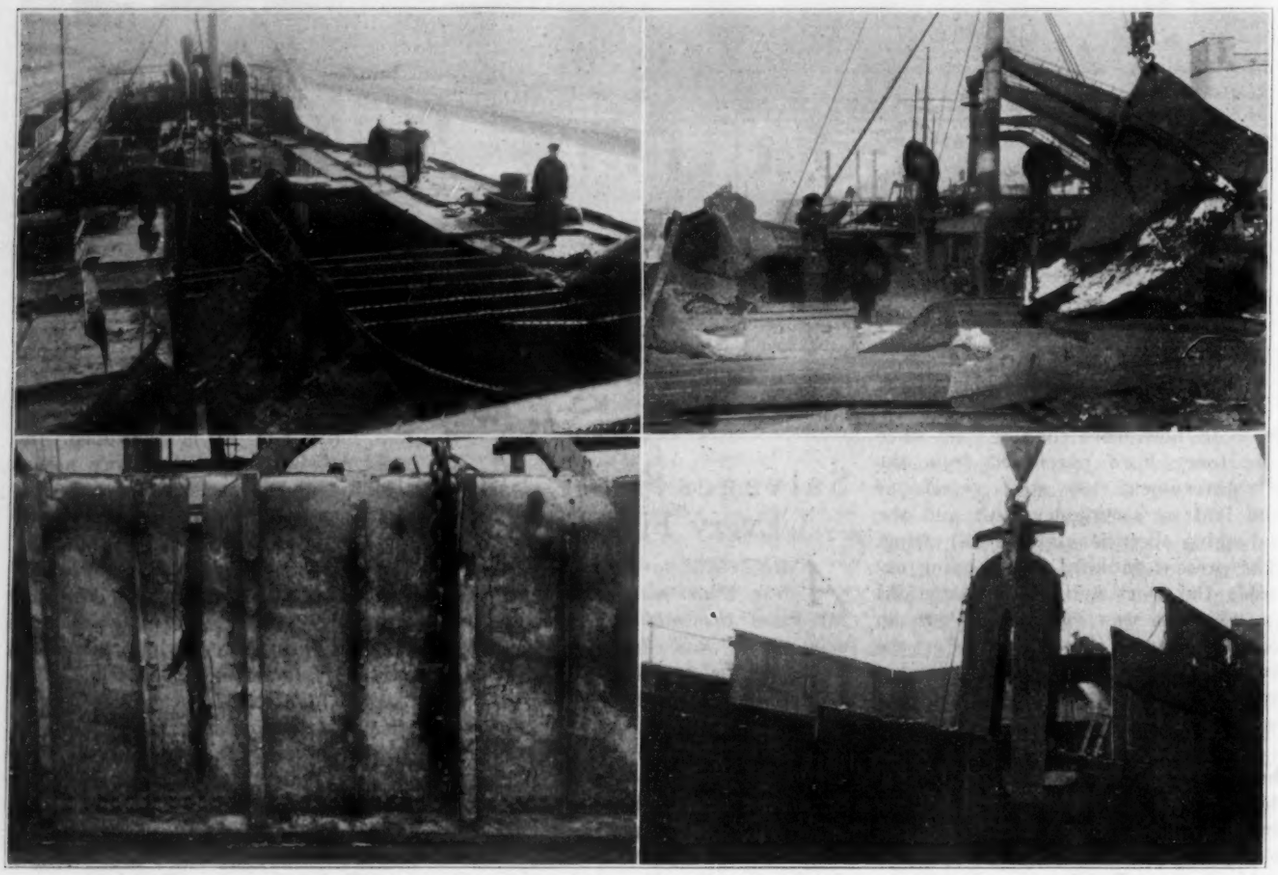
Of the 199 vessels sold to Ford for scrapping, 149 were "Lakers" and the remaining 50 were what is known as the "Submarine" boat type. The "Lakers," so called because they were all built in shipyards located on the Great Lakes, are of approximately identical dimensions and arrangement, limited in length and beam to Welland canal size. With slight variations the dimensions are: length overall 261 feet, length between perpendiculars, 251 feet, beam molded 43 feet 6 inches and depth 22 feet 6 inches to 28 feet 2 inches. They are coal burners of three island, single deck, single screw cargo type and have three cylinder reciprocating engines of about 1000 to 1400 indicated horsepower and two scotch boilers. The deadweight varies from a minimum of 3280 tons to a maximum of 4155 tons. These vessels were built during 1918 and 1919 largely by the old established yards such as the American Ship Building Co., the Great Lakes Engineering Works, Toledo Shipbuilding Co. and Manitowoc Shipbuilding Co.

Turbine Drive Used

The 50 ships of the "Submarine" boat type were built during 1918, 1919 and 1920 by the Submarine Boat Corp. at Newark, N. J. These vessels are 335 feet 6 inches in length

overall, 324 feet in length between perpendiculars, 46 feet in beam and 28 feet 6 inches in depth. They are oil burners of three island, single deck (with 'tween deck beams in Nos. 1 and 4 holds), single screw cargo type and have Westinghouse turbines with gear reduction of 1440 shaft horsepower and two Babcock & Wilcox water tube boilers. The deadweight varies from 5085 to 5340 tons, though they are of identical design.

Great Lakes it was most important to get at least one vessel through to Detroit so that experiments in scrapping could be carried on in order to determine the best methods and what equipment would be necessary. The LAKE FONDULAC was therefore withdrawn from the fleet at New York, Nov. 9, 1925, and after the necessary reconditioning to permit steam on one boiler and the use of the steering gear, pumps, winches and windram in conjunction with hooking the crane falls to a corner of the deck plate and so ripping it off the beams, was tried. Special knives attached to the crane falls were used for slitting the hull side plates vertically. The accompanying illustrations show some of these operations and the results. The vertical cutter worked well but it depends upon a clear unobstructed wall structure. The ripping off of plates produced annoying



TRYING OUT NOVEL METHODS OF SCRAPPING ON THE FIRST VESSEL OF THE FLEET, THE LAKE FONDULAC, BROUGHT TO THE FORDSON PLANT, DETROIT—UPPER LEFT—PHOTO TAKEN JAN. 7, 1926, RIPPING DECK PLATES OFF WITH CRANE FALLS AIDED BY HYDRAULIC JACK UNDER PLATES—UPPER RIGHT—JAN. 16, 1926—TWISTED AND TORN DECK PLATES SHOW GREAT FORCE APPLIED—LOWER LEFT— JAN. 20, 1926—SLITTING TOP SIDES OF HULL WITH HOOK KNIFE ON CRANE FALLS—LOWER RIGHT—SLITTING HULL SIDES AT SIX FEET SPACING BY SPECIAL ROLLER CUTTER IN A HEAVY FRAME ATTACHED TO CRANE FALLS. AT LAPS AND THROUGH RIVET HEADS A THICKNESS OF TWO INCHES WAS SHEARED IN THIS MANNER

It was a part of the terms of the contract that the vessels were to be turned over to the purchaser at their respective anchorages. The number in each class and location was specified. Of the 149 "Lakers" of various classes 90 were laid up at Norfolk, Va., 9 at Hog Island, Pa., 14 at Jones' Point, N. Y., on the Hudson, 7 at Staten Island, N. Y., 9 at Orange, Texas, 2 at Mobile, Ala., and 18 at New Orleans. Of the 50 "Submarine" type, 19 were laid up at Norfolk, Va., 12 at Hog Island, Pa., 16 at Jones' Point, N. Y., on the Hudson, and 3 at Staten Island, N. Y.

With winter coming and the close of navigation approaching on the lass, with not a day to spare in order to get through, left the Ford plant at Kearny, N. J., Nov. 15, 1925, in light condition towed by one of the Ford tugs. She encountered heavy weather on the way and arrived safely at the Fordson plant, Fordson, Mich., Dec. 17.

Special Devices Employed

No time was lost in beginning the experiment of scrapping. With his well known reluctance to accept customary methods as necessarily the best Ford tried out some of his own. He wanted to reduce torch cutting to a minimum. Pressure exerted under decks by a powerful hydraulic distortions which rendered difficult the further reduction in size of the scrap.

In the meantime plans were being carried out for a substantial dock along the entire length of the side of the slip directly across from the ore dock. Three sets of railroad tracks and a set of widely spaced rails including a third rail for gantry cranes were laid down. Feeder tracks joining with those on the dock were built giving connection with the large new open-hearth furnaces and to near and distant storage sectors. Throughout the winter and spring while studying the scrapping problem in detail and experimenting in every conceiva-

ble way with the LAKE FONDULAC, the question of equipment to carry out operations on a large scale was carefully considered.

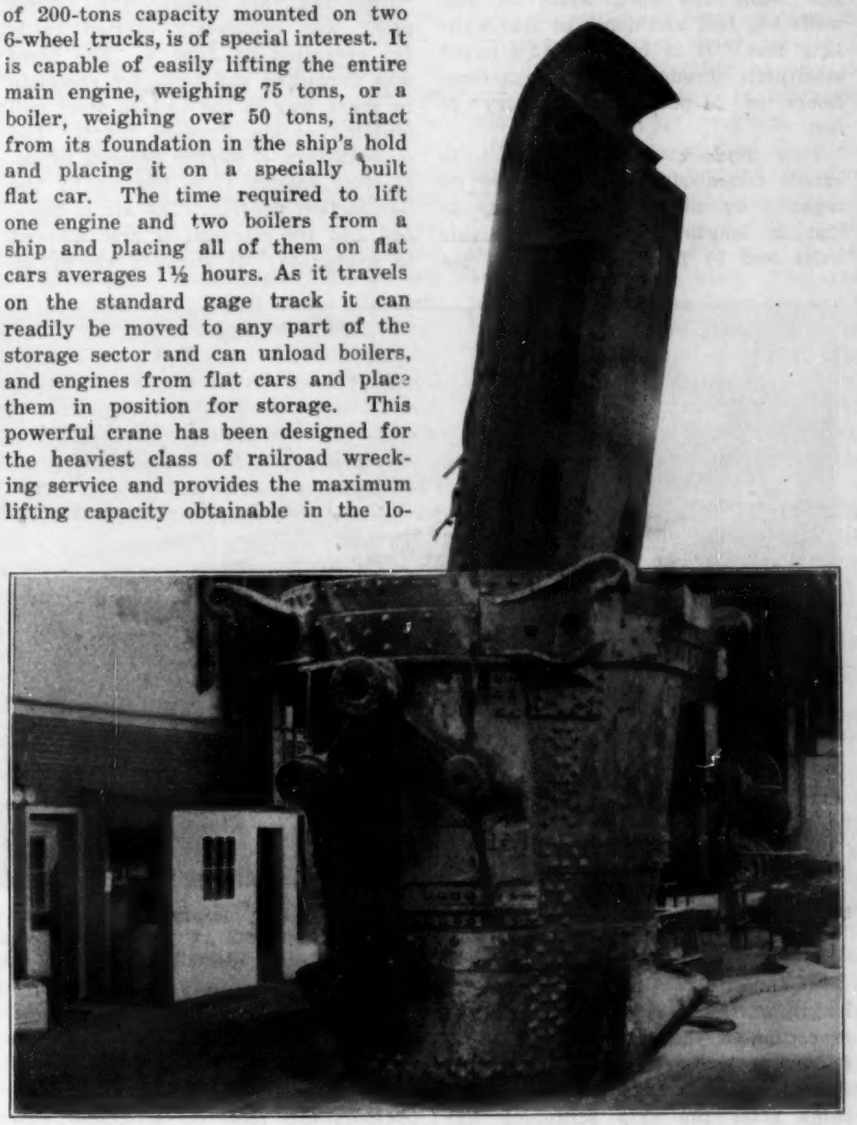
It is now necessary to consider briefly what was going on during this time at the three Atlantic coast shipyards given contracts to carry out certain scrapping operations. According to the plan each of these yards were to scrap only the "Submarine" type of boats into sizes suitable for loading in "Lakers" the latter when loaded to be towed to Detroit by Ford tugs. The Federal Shipbuilding & Drydock Co., Kearny, N. J., began scrapping operations on the "Submarine" type boat OPEQUAN Nov. 18, 1925, and on the LAKE CANDELARIA (an experiment on this type and the only "Laker" scrapped by a coast yard) Nov. 24, 1925. Scrapping of "Submarine" type boats by the Sun Shipbuilding & Drydock Co., Chester, Pa., and by the Southern Shipyard Co., Newport News, Va., also commenced during the winter and is now under way. There is nothing unusual about the methods employed. All the detachable parts are removed and then acetylene burners are used to cut up the steel structure which is loaded into waiting "Lakers." The machinery of all kinds is salvaged intact. When the hull has been cut down to near the double bottom, this part is towed on a marine railway or into dry dock for final cutting up. Up to the middle of September of this year the Sun Shipbuilding & Drydock Co. had completely cut up seven vessels and there are four in process, the Federal Shipbuilding & Drydock Co., five vessels completely and six in process, and the Southern Shipyard Co., five vessels completely and four in process.

Operates Locomotive Cranes

By June 1, 1926, four 60-ton standard gage locomotive cranes had been purchased and were in operation. Each crane has a 60-foot lattice boom. Air brakes are applied on all eight wheels, and there are special combination beam and roller type outriggers. The lifting capacity for a 16-foot radius is 120,000 pounds; for a 25-foot radius 74,000 pounds; and for a 60-foot radius 20,000 pounds, in each case without outriggers. Five gantry type cranes were bought. They are 35-ton, 8-wheel, 5-motor, variable radius gantry cranes with main and auxiliary hoists and traveling and rotating superstructure. The capacity is 35 tons at a 20-foot radius and 15 tons at a 55-foot radius while the auxiliary hoist capacity is 3 tons. These cranes are of the customary shipyard type. Each crane is equipped with two 85-horsepower 550 revolutions per minute direct-current motors and three 25-horsepower 725 revolutions per minute direct-current motors.

As a remarkably fine working machine the locomotive wrecking crane of 200-tons capacity mounted on two 6-wheel trucks, is of special interest. It is capable of easily lifting the entire main engine, weighing 75 tons, or a boiler, weighing over 50 tons, intact from its foundation in the ship's hold and placing it on a specially built flat car. The time required to lift one engine and two boilers from a ship and placing all of them on flat cars averages 1½ hours. As it travels on the standard gage track it can readily be moved to any part of the storage sector and can unload boilers, and engines from flat cars and place them in position for storage. This powerful crane has been designed for the heaviest class of railroad wrecking service and provides the maximum lifting capacity obtainable in the locomotive type of crane. It is provided with Westinghouse air brakes, telescopic outriggers and is fitted with a boom 50 feet long to main hoist pin with an 8-foot extension to the auxiliary hoist pin. The lifting capacity with outriggers in place is 200,000 pounds at a 30-foot radius and 160,000 pounds at 35-foot radius. The weight of this crane ready to operate is 366,000 pounds. It is operated by steam. The foundation in-

way of the dock at the point where the industrial wrecker operates required 88 piling driven into the ground and tied together with concrete. Each piling is estimated to hold a load of 25 tons. There is a maximum reaction at the end of the center outrigger, 13 feet from the center of the crane, of 350,000 pounds.



CELLULAR DOUBLE BOTTOMS ARE CUT BY THE TORCH INTO SECTIONS 6 FEET WIDE AND THE FULL WIDTH OF THE SHIP, 42 TO 44 FEET. AT FIRST THESE SECTIONS WERE INSERTED IN LADLES OF MOLTEN PIG IRON, BUT WERE FOUND TOO LONG TO BE ABSORBED. ABSORPTION WAS COMPLETE WHEN THE SECTIONS WERE CUT IN HALF, BUT THE ACTION WAS SOMEWHAT SEVERE. BEST RESULTS ARE OBTAINED WHEN THE DOUBLE BOTTOMS ARE CUT INTO THREE PIECES AND INSERTED IN THE LADLE AS SHOWN

Another very special and interesting piece of equipment is the drydock moored at the extreme far end of the slip and used for the final step in scrapping ships. This drydock was designed and constructed by the Great Lakes Engineering Works, Detroit, and was delivered to the

Fordson plant June 5, 1926. It was ordered on March 22. The weight of the drydock is approximately 500 tons and the lifting capacity is an equal amount. It is built in one section, the length of the pontoon being 250 feet, depth 5 feet, length of side walls 150 feet, width of side walls 5½ feet and depth of side walls 12½ feet. It is built of 12½-pound steel plate throughout with transverse floors of 14-pound plate every 25 feet.

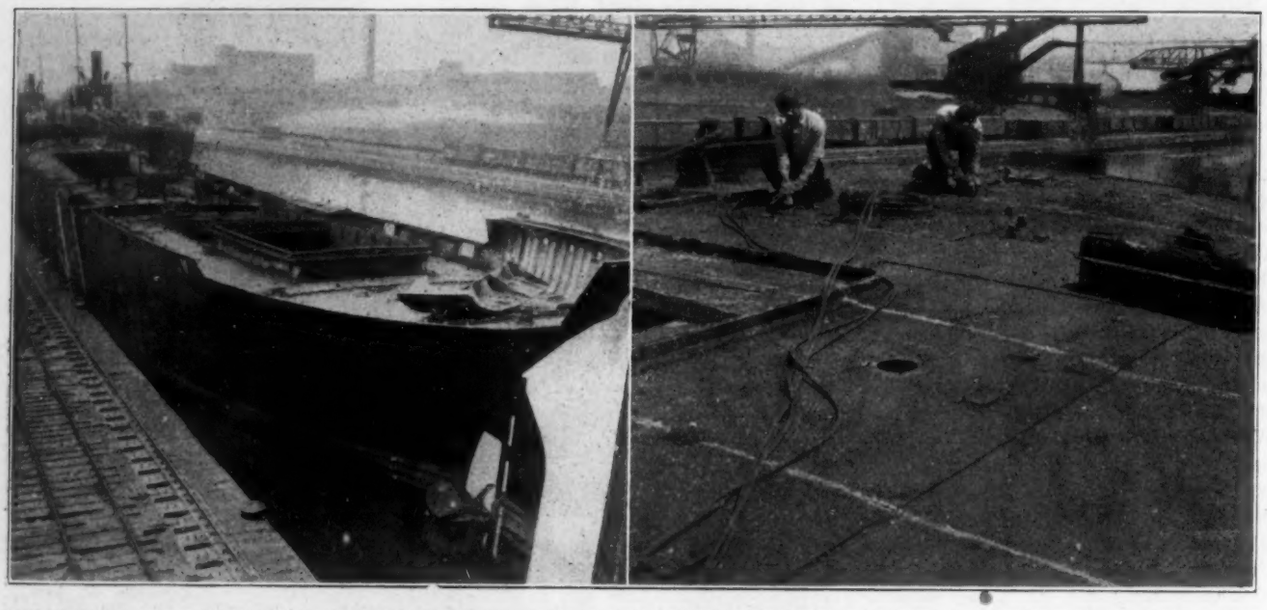
This drydock may be rebuilt to handle commissioned ships within its capacity by adding approximately 30 feet in length to the present side walls and 10 feet in height for the length of the present side walls. It is estimated that it will cost about $27,000 to make the changes so that it will be suitable for commissioned ships after the ship scrapping has been completed. In its present condition it takes two hours to sink the dock to the 4-foot level. By the time the last piece is off the drydock the dock is partially submerged. With one of the ship bottoms in the drydock the time required to raise the dock is 1½ hours. It can be said that men are working on the hull bottom by the time it is out of the water.

Make Own Oxygen

Cutting by torch is one of the major operations in the ship scrapping program. At first bottles of oxygen and acetylene gas were used. To reduce the cost and to make the supply of gas and oxygen as convenient and flexible as possible the Ford company decided to install an oxygen plant capable of producing 2000 cubic feet of oxygen per hour at a purity of 99.5 per cent. In the meantime entirely successful experiments were carried out using coke oven gas of which there was a plentiful supply within the yard itself. The oxygen plant was completely erected ready for operation on June 6. The plant was furnished and installed complete in every way in the 14-inch steel mill building at the Fordson plant. The manufacture of oxygen consists of extracting oxygen from the air by the liquifaction process. The air is liquified and the nitrogen is first allowed to evaporate. It consists chiefly of the following items: two steel low pressure purifying towers; one four-stage compressor; one steel solution mixing tank; one four-stage compressor; one steel oil separator cylinder with valve; one air drying and purifying battery consisting of eight high pressure seamless drawn steel cylinders, one steel high pressure air filter cylinder; one rectifying column constructed of an outer steel shell with spiral copper coils; one thawing coil and steel container; one oxygen meter for a maximum flow of 2500 cubic feet per hour; one gas holder with capacity for 1500 cubic feet of oxygen, constructed of 3/16-inch steel braced with 2-inch angles; one high pressure oxygen compressor to compress 3500 cubic feet of oxygen to 150 atmospheres; one charging manifold of 20 connections with control gage, check valve, shut-off valves and connecting piping of nigh pressure copper construction and the piping, valves, fittings, gages and safety devices necessary for proper operation.

Manifold Line Provided

Pipe lines of oxygen, coke-oven gas and compressed air run along the outer side of the entire length of the new dock provided for the scrapping operations. There are frequent connections to these pipe lines from which rubber hose may be run on board of all of the different vessels (and there is room for 10 in line) in varying stages of the process of scrapping. Two heavy-duty plate and scrap shears, and an Alligator shear are installed in the open-hearth building for cutting up steel to charging box size. Another 1000-ton shear of special design to be operated by steam and hydraulic power is now being built for installation in the same building. This shear is designed to crush and cut the double bottom sections thus obviating the necessity of cutting these sections by torch to plate scrap.



SHIP SCRAPPING OPERATIONS AT THE FORDSON PLANT, FORDSON, MICH. AT THE LEFT IS SHOWN A LINE OF SHIPS AT THE NEW DOCK IN VARIOUS STAGES OF DISMANTLING. AT THE RIGHT IS SHOWN THE OPERATION OF CUTTING THE MAIN DECK FROM SIDE TO SIDE IN SECTIONS 6 FEET LONG FORE AND AFT

On May 31, when the LAKE ELIZABETH and LAKE FRENCHTON (the first two this year) arrived at the Fordson plant, everything therefore, was practically complete for beginning scrapping in an orderly, systematic and rapid manner. The stage was set and the actors were ready to go on with their various acts. We shall now see how well this program has progressed up to the present time. The LAKE FONDULAC, the first ship of the fleet arrived at Detroit on Dec. 17, 1925, and after having been thoroughly experimented upon was

completely scrapped on June 15, 1926, an elapsed time of 180 days. The LAKE FRENCHTON, arrived May 31, and was completely scrapped June 29, an elapsed time of 29 days. The LAKE ELIZABETH arriving on the same day was completely scrapped July 1, an elapsed time of 31 days. From the beginning of operations this year one vessel was scrapped every two days and later (during September) the time was reduced to three vessels completely scrapped each five working days.

To keep up such a rapid pace in scrapping requires not only the most complete equipment but also systematic and energetic methods of control and supervision. Ten hulls are constantly in process of dismantling on their way for final cutting up in drydock. There is also of course, always the remnant of one hull in drydock for final cutting up.

The first step before a vessel has been brought into line is the removal of all consumable stores, then the hardware, furniture and other extraneous materials. In the third step all wood such as wooden decks, wooden partitions, ceilings and dunnage is removed from the ship. The ventilators, stacks, masts, etc., are then removed. In the meantime several burners are employed in cutting away superstructure steel. The hulls are moved from time to time along the line, being further and further cut down until finally the engines and boilers are exposed. These are lifted out of the ship bodily over the side which has been cut down so as not to require too high a lift for the powerful wrecking crane which does this job. The boilers and engines, placed on flat cars, are then removed to storage sectors.

No burner is allowed to cut any part of the ship before it is marked off by a charge man or someone under him. Each ship is a unit in itself and is in charge of one responsible man. There is a boss burner and an assistant who has general supervision of the burning throughout the entire job. One man is in charge of the entire scrapping operation from the point of bringing the ships into line to the delivery of the scrap to the mills or to storage. Steel decks are burned in sections not over 6 feet long fore and aft and the full width of the ship to the sheer strake angles. A burner will cut such a marked section with the exception of a few inches here and there to hold the section in place until the crane is ready, and it is not completely severed until the crane falls have been attached. This prevents the possibility of any accident. By following the rule that no cuts must be made that are not marked and that no sections may be entirely severed until the crane sling is attached the job goes along more quickly and accidents are prevented. By cutting all the large areas not over six feet in length, the scrap can readily be later reduced to charging box size by shearing.

As the scrap is cut free it is loaded into railroad cars and as these are filled they are switched to the storage yards or the steel mill. Along with the scrapping of the ship goes the unloading of the scrap from its holds brought in as cargo from the Atlantic coast yards. This scrap is unloaded by the gantry cranes into cars and sent to mill or storage. Over a four-day period it has been found that the average crane hours per day of 24 hours, working three shifts, is 70.2 hours for three cranes for unloading the scrap into the yards. There are in all 10 cranes as detailed above working 16 hours per day on the boat scrapping job along the wharf including the powerful locomotive wrecking crane, and three cranes engaged in unloading 24 hours per day. The accompany illustrations show the methods pursued.

No Part is Wasted

Every part of the vessel is salvaged in one way or another. Each vessel is stripped of its wood before it comes into line at the scrapping dock. A small saw mill has been erected at the point where the wood is taken off and all the odds and ends of small salvaged lumber enter this mill by a conveyor along which a number of men remove nails and other metal parts. In this mill the lumber is planed and cut to varying thicknesses and lengths. All of the cork from the refrigerating rooms is reclaimed, and so is asbestos and pipe covering. There is practically no cast iron scrap. Windlasses, winches, steering engines, pumps, dynamos and every bit of auxiliary machinery, are, like the main engine boilers, saved intact for future disposition. All steel piping is also salvaged for use as pipe. Nonferrous metal scrap, it is said amounts to about 15 tons per ship.

The most interesting use has been made of the main engine unit removed from the LAKE FONDULAC. After a very thorough overhauling and renovating this engine and the two boilers making a complete unit was set up as shown in an accompanying illustration at the Fordson plant. A generator was connected to the engine and it is now possible to generate 1000 kilowatts of power with this unit. It is the intention to overhaul other units in a similar manner and to use them at different Ford branches for supplying power, this amount in many cases being sufficient for all the power needs of such branches. The contract under which these vessels were bought from the government directly prohibits the sale of any machinery of any description or of any other part in its original state. Nothing of any description is being sold in connection with this scrapping program.

Steel scrap is being used every day at present to the amount of about 400 tons in the open-hearth furnaces. With the mill running at full capacity it is expected that 800 tons of steel scrap a day will be used. The scrap is fed on a conveyor from the car to the shears. At the shears it is cut to charging box size and then lifted by cranes or magnets into the charging boxes and thus into the furnaces. Some scrap steel is also being used in the cupolas of which there are 33. Small quantities of steel is also being used by absorption in the molten metal drawn from the blast furnace before pouring into pigs. A better grade of pig iron is thus obtained.

From June 1, up to Sept. 22, 33 vessels have been completely scrapped at the Fordson plant. Twelve are in process of scrapping at all times. The rapidity with which scrapping is being carried out has necessitated considerable attention to the towing schedule. The present average delivery of vessels at Detroit is 15 per month and 12 vessels are at present being completely scrapped in four weeks, or in 20 working days.

When this work is completed, over 275,000 gross tons of heavy melting steel will have been salvaged, which after all, with all ten of the open-hearth furnaces working at full capacity requiring 800 tons per day, will be sufficient at this rate for only 344 days. There will also remain to the salvagor tremendous stocks of large reciprocating engines, turbines, hundreds of large scotch and water tube boilers, dynamos, windlasses, anchors, steering engines, winches, capstans, pumps, tanks, piping, fittings, valves, navigating gear, port light frames, lumber and innumerable other items.

If operations continue at the present rate and if weather conditions are not too severe it is reasonable to expect that the entire program will be completed by the fall of 1927. For the magnitude of the job, it is being carried on with astonishing regularity and speed, due no doubt to careful planning, completeness of equipment and energetic direction.

Large Uses of Steel In Small Ways

KEEPING the nation's finger nails manicured is not customarily thought of by manufacturers of iron and steel products as a factor in the consumption of their products. Although the tonnage involved is not heavy, the quantity of finger nail files produced annually runs into large figures.

It is estimated by the largest producer in the United States that approximately 40 to 50 tons of steel is used for finger nail files and from 20 to 25 tons for other implements in manicure sets. Finger nail files require a special steel, known as manicure file steel. It is a high carbon, cold-rolled strip, prepared with particular care by the producer to insure a close grain structure capable of taking a high polish.

The cold-rolled strip is cut first into convenient lengths for handling. This then is run through a punch press where the file is blanked. One press, running at high speed can turn out several thousand files a day. The files next are placed on file cutting machines, and a three-way cut put on each side. The machines used on this operation are of special make for finger nail file production. A two-way cut can be put on the file in one operation.

These operations are made while the steel is in its original temper. Next the blanked and cut files are taken to the hardening process. This consists of a bath in a hot cyanide solution lasting about a minute. Two files at a time are hardened by one operator, the two coming out fastened in the same hardened cyanide coating. The files next are tempered in electric ovens, after the cyanide deposit has been cleaned.

After the hardening and tempering has been completed the files are ready for the final operations which consist of polishing, plating and buffing. Most files are nickel plated on the handles, although some have a black finish which is a rust preventative but not a plating. After plating the files are polished on buffing machines, washed in gasoline and wiped.

Tweezers are made in similar operations, being blanked of cold-rolled strip steel. A spot welder is used to weld the two arms of the tweezers together. The file cutters are not used on most tweezers, although a few have tip faces corrugated for about ⅛-inch. This operation is performed before the welding. The hardening, polishing, plating and buffing is similar to that used in producing files.

Although several other parts of manicure sets are made from steel, the bulk of all products are scissors, tweezers and finger nail files.

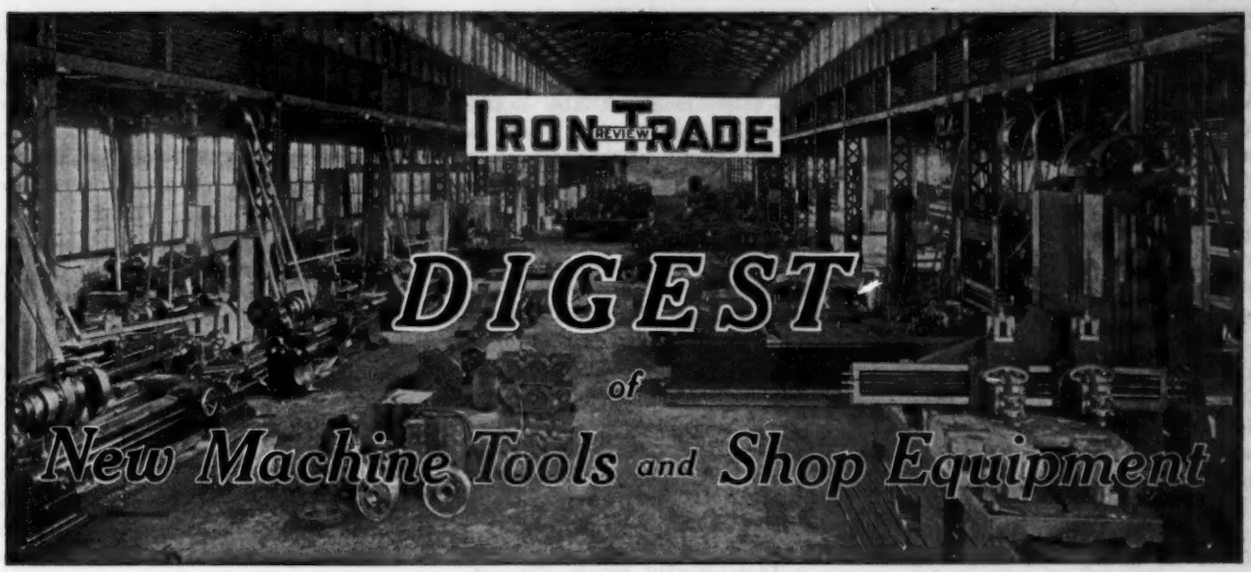
Finger Nail Files

THIS is the seventy-fourth of a series of articles dealing with some of the obscure uses of steel which go far toward absorbing the great American tonnage.

The first article on "corsets" appeared Nov. 22, 1923. Other articles appearing fortnightly since are:

Pins	*Pens*
Cotton Ties	*Steel Wool*
Toys	*License Plates*
Spinning Rings	*Hypodermic Needles*
Card Clothing	*Shoe Steel*
Tie Plates	*Crushed Steel*
Tacks	*Skates*
Knives and Forks	*Needles*
Surgical Instruments	*Phonograph Needles*
Fence Posts	*Golf Clubs*
Eyeglass Cases	*Mechanical Pencils*
Fishing Tackle	*Burial Caskets*
Dental Drills	*Telephones*
Pocket Knives	*Radio Towers*
Rat Guards	*Brushes*
Snap Fasteners	*Electric Bells*
Paper Clips	*Bookbinder Wire*
Steel Vests	*Sucker Rods*
Electrical Conduit	*Watch Hands*
Radiator Furniture	*Steel Furniture*
Notebooks	*Highway Markers*
Metal Beds	*Camp Cots*
Bolts and Nuts	*Flexible Shaft*
Metal Lath	*Wood Pipe*
Tin Cans	*Buttons*
Umbrellas	*Sheet Metal Screws*
Steel Barrels	*Rivets*
Washers	*Billboards*
Overall Trimmings	*Razor Blades*
Bird Cages	*Metal Strapping*
Turnbuckles	*Lace Tips*
Steel Derricks	*Oil Cups*
Handle Cores	*Ventilators*
Camp Stoves	*Toy Autos*
Bottle Caps	*Safes*
Artificial Limbs	*Scissors—Shears*

PUNCH PRSSES ARE USED TO BLANK OUT THE FILES



Exhibits Aid Machine Tool Sales

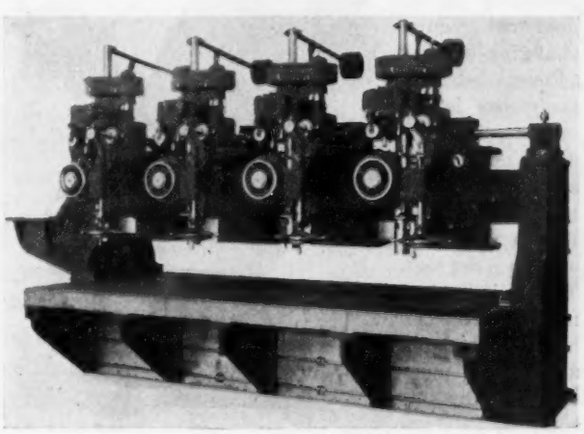
WITH the two major expositions of machine tools written as history, equipment builders feel encouraged with the general business situation and are settling down for a good fall period of activity. These exhibits came after a summer of good business, a summer in which buying dropped off less severely than usually is the case. Thus, machine tool manufacturers hailed September as the beginning of what should be a profitable season.

On Sept. 7 to 10, the sixth annual New Haven machine tool exhibit was held, at New Haven, Conn., and while the equipment displayed was somewhat less extensive than that at previous shows, the attendance was better and there was a greater evidence of interest on the part of machine tool

Machine Drills Fire Box Sections

No. 158

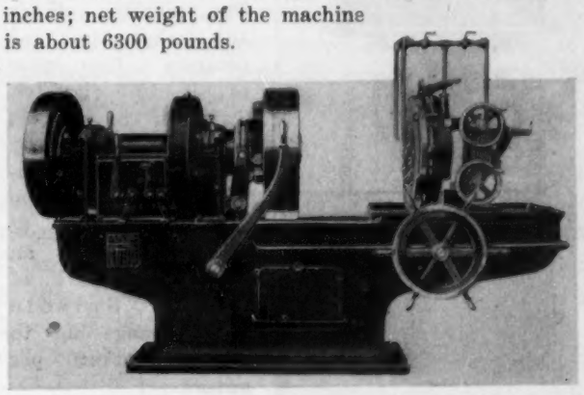
To meet the demand of railroad shops for heavier equipment, Foote-Burt Co., Cleveland, recently has designed a machine for drilling rivet holes around locomotive fire box mud rings, and flue holes in boiler flue sheets. The long travel of the table as well as the free adjustment of the spindles, allows drilling large flue sheets at one setting of the work. Mud rings can be bolted to the finished base for drilling rivet holes, by means of 3 T-slots running horizontally. The two outside table-supporting knees are fixed but the 3 center knees are adjustable so as not to interfere with clamping the mud rings. While drilling flue sheets, all knees are securely dowelled in position and form the bearing for the table.



Pipe Threader Takes Large Sizes

No. 159

Landis Machine Co., Waynesboro, Pa., has added to its line of pipe threading and cutting off machines a new machine of 4-inch capacity. The tool is driven by a single pulley and can be converted easily to motor drive. The gear box contains a reversing mechanism operated by a convenient lever. Front and rear chucks are of the 3-jaw type, the former having universal adjustment. It is lever operated also, permitting pipe to be put in and taken out without stopping the machine. The range of 1 to 4 inches is covered by 2 stationary die heads, floating horizontally in a T-slot on the cross rail. All starting, stopping and reversing levers are located on the operating side of the machine. Eight speeds are supplied; carriage travel is 24 inches; floor space required measures 4 feet 5¼ inches by 8 feet 6 1/16 inches; net weight of the machine is about 6300 pounds.



users and buyers. The climax in machinery shows, however, was found at Chicago, Sept. 20-24, when the American Society for Steel Treating conducted its eighth annual steel and machine tool exposition. About 40,000 square feet of floor space at Municipal pier, or half of the total space, was devoted to the operation of what might to said to be the most complete display of metalworking equipment ever assembled.

At the latter exposition some 80,000 people passed through during the week and they were more than idle sightseers, as most manufacturers and dealers represented will attest. No complete census of business done at Chicago has been taken, but scattering inquiries point out that much of the machinery was sold from the floor and was shipped directly to customers. In some cases, machines were sold several times over. Likewise, there is no way to determine just what sales were made as a result of the show, for many of the machines would have been contracted for regardless, but it requires no stretch of imagination to believe that the exposition had the effect to hasten many purchases. In other words, manufacturers now have on their books, orders for tools which without the show might not have been received until late in the year or early in next. Still more important than sales made at the exhibition, however, is the fact that every manufacturer points with pleasure to a sizable prospect list from which will come a good portion of the business for months to come.

Inasmuch as most machine tool builders were represented at the machine tool shows last month, they had scheduled the introduction of new models and redesigned models in advance of the exhibitions. Many of these models were described in IRON TRADE REVIEW'S machine tool digests for July and August. During September, relatively little new metalworking equipment was brought out.

Tools Mostly Single Purpose

It appears that much of the equipment announced last month, was of a special or single-purpose character. This applies particularly to the mud-ring and flue-sheet drill described as No. 158 in the accompanying digest. This machine is the product of the Foote-Burt Co. and was designed to meet the demand of railroad shops for heavier equipment required in building the modern larger type locomotive. Regularly equipped with four heads, the unit will drill the rivet holes around the fire box mud rings and the flue holes in boiler flue sheets. Each head has a drilling capacity of 3½ inches in solid steel, or 7 inches using a flycutter, and each is equipped with quick-feed changes independent of each other.

The long travel of the table, the back and forth adjustment of the spindles, as well as the in and out adjustment of the spindles, allows the drilling of large flue sheets in one setting. The machine is so arranged that a pit can be placed in the floor flush with the front finished edge of the base to allow the mud rings to project down into while the rivet holes are being drilled. Great care was taken to make the machine as rigid as possible. The table has a working surface of 75 x 144 inches and is provided with an in and out adjustment of 60 inches.

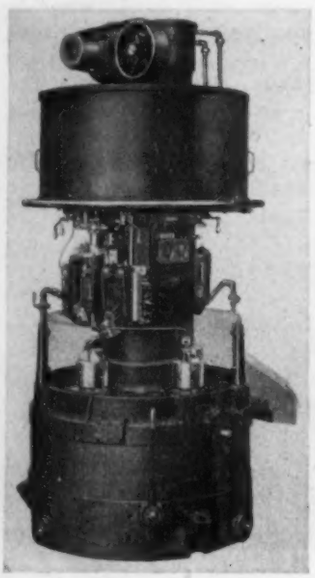
In No. 160 is described a new size of automatic vertical milling machine built by the Bullard Machine Tool Co. This tool differs from the previous model both in size and number of spindles; it has a 6-inch capacity and four spindles. It overall height is 104 inches and it is contained in a floor space 48 inches diameter. The op-

(*Concluded on Page* 959)

Vertical Miller Has Power Chuck

No. 160

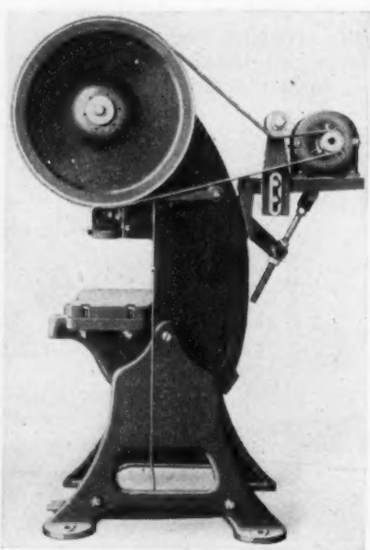
Bullard Machine Tool Co., Bridgeport, Conn., has brought out a new 6-inch 4-spindle automatic miller, designed for handling comparatively small pieces for which quick set-up and frequent tool changes are required. A feature of this tool is the power chucking device, a mechanism at the loading station which connects with each spindle in turn as it is presented for loading the work. By a throw of a lever in either direction, the work is respectively gripped or released. The device is suitable for operating either standard or special chucks and is adaptable for using several types of work-holding fixtures. The machine stands 104 inches high and occupies a floor space of 48-inch diameter. Swing of the work is 10 inches horizontally and 5 inches vertically. Tool heads have a vertical travel of 5⅛ inches and an angular travel of 2 inches. Spindle speeds range up to 480 revolutions per minute.



Press Inclines to Forty Degrees

No. 161

Federal Press Co., Elkhart, Ind., has placed on the market an open-back inclinable punch press fitted with individual motor drive. The press can be furnished in several sizes and the motor drive is adapted for either flywheel or gear types. Motor bracket is mounted securely on the frame of the machine and can be supplied for the accommodation of any standard make of motor. The bracket is fully adjustable, so that the motor will remain horizontal with the press in an inclined position. The tool is driven directly from the motor through a leather belt which, due to a compensating device, does not require changing at any time, whether the press is operated in the usual upright position or inclined to any angle up to the maximum of 40 degrees. The individual motor drive can be furnished on all presses manufactured by this company.



Editorials

A. F. A. Is Industrial Asset

THOSE who were fortunate enough to attend the thirtieth annual convention of the American Foundrymen's association at Detroit last week undoubtedly received encouragement and inspiration that will prove beneficial in their daily struggle with foundry problems. Certainly they could not have observed the large display of foundry equipment and supplies or listened to the technical papers, reports and discussions without gaining information of definite practical value.

But aside from the benefits derived by the individual foundrymen, the importance of the meeting to the entire industry cannot be overestimated. The better understanding resulting from the gathering of foundrymen from 12 nations is an asset of unusual significance. Of equal value is the "conciousness" of the foundry industry and its products induced on the minds of manufacturers, outside of the circle of castings producers, who saw or heard of the exposition and were impressed by its size and scope.

The mere fact that the association has grown steadily through 30 years of service to its industry, is evidence that foundrymen are in need of such an organization and that they appreciate what is does for them. The further fact that for many years the association, although serving in a field much more limited in scope than those served by other similar organizations, has held first rank among the technical associations of America and Europe is a high compliment to its officers and continuing management.

Ford Experiments with Five-Day Week

ONCE more an astonishing industrial move has been announced by the Ford Motor Co. The plan as set forth by Henry Ford provides that workmen shall be paid wages for five days' labor on a basis equivalent to six days' pay. This new wage basis will become effective in many of the 50 diverse lines of industries now covered in the Ford organization.

Effectiveness of the highly organized machinery equipment of the Ford company is possible, declares Mr. Ford, through being kept in operation throughout the entire 24 hours. This is true in a practical way only of 18 hours out of the 24, according to the Ford experience, because the rate of production sags in the remaining six hours, from midnight to 6 a. m., due to the human factor. Hence the machinery operation is likely to be confined to not more than 18 hours continuous operation in the trades where the new plan is being tried out.

The most pregnant comment on the Ford plan is offered by Sir James Corcoran, spokesman for the British Federation of Industries. He declares the Ford company's position in industry is "special," and therefore the plan may not be practical for others to follow. That observation seems to sum up the ideas as expressed by many important American industrial leaders whose opinions have been sought.

Stripped of its expressed altruism, the Ford scheme appears to have a practical side overlooked by many but effective because of the Ford company's special position in industry. That side contemplates allowing one day each week, Saturday for instance, to the purchasing department and the stockroom of the Ford company to put itself in order for the next week's intensive production. The company today is operating on a short-time inventory.

Mr. Ford declares he expects no falling off in output of his primary production of automobiles. That is the crux of the entire 5-day week scheme. Nor does he expect his production costs will rise, due to further intensified production, which he claims possible because of the physical and mental recuperation of his workmen during their two days of inactivity. Both these factors still remain to be demonstrated.

New England Claims Diversification

MEN in the metal working industries in New England are gratified by the increasing activity in textiles. Undoubtedly their hopes for improvement in foundry and machine shop operations as a reflection of textiles are well founded. Nevertheless, the association of the two should not be exaggerated, for it has become a habit carried over from the early days to assume that New England's prosperity as well as her depressions revolve about the textile industry.

New England's texile industry has been slipping, and as a result many have gained the impression that New England also is slipping. French Strother in an article on New England in the September *World's Work* refutes the assumption of New England's decadence.

"New England," says this article, "has 2 per cent of the land area of the United States, 7 per

cent of the population, and 16 per cent of the savings. It has 20,000 local industries with an annual production of $8,000,000,000."

Some of the principal items other than textiles which now contribute to New England's prosperity are paper and wood pulp, printing and publishing, shoes, rubber goods, leather goods, slaughtering and meat packing, confectionery, furniture and jewelry. Not one of these industries produce less than $25,000,000 worth of finished goods each year. "Apparently not all of Jonathan's eggs are in one basket," said Mr. Strother.

The Hood Rubber Co. in New England employs 7500 people, and does a gross business of $40,000,000 a year. The Gillette Safety Razor Co., Boston, in less than 20 years has earned $81,000,000, and has paid $34,000,000 in cash dividends. The United Drug Co., with headquarters at Boston, does a gross business of $130,000,000 a year. The United Fruit Co., with headquarters at Boston, employs 70,000 and has a capital and surplus of $172,000,000. These are large figures. They should dispel the notion that New England's prosperity follows the demand for textiles.

Meeting the Test at Miami

WITH one exception the structural steel and reinforced concrete buildings of southern Florida stood the test of the recent hurricane. Broken glass and flooding waters were the major physical hazards experienced by those who sought shelter in them. There were no more secure refuges while the hurricane ripped and tore. In some quarters it is said that present specifications for steel frame structures do not afford a factor of safety consistent with exposure to wind pressures of 20.6 pounds per square foot—the force exerted by a 120-mile blow—and perhaps future construction will lean more on the side of super safety; yet the fact is that only one large, modern building in Miami must be rebuilt. Structural steel and reinforced concrete structures are the development of the present age. After Tokio and Santa Barbara has come Miami. Refinements are desirable and will come, of course, but basic principles have been amply proved.

Prefers Filled Rank to Fines

HUNDREDS of railroad shopmen who have been characterized as "deserters" from the American Federation of Labor and who have had fines hanging over them for three years or more are to be gathered back into the fold by the machinists' union. The union is remitting the fines imposed upon them during the shopmen's strike of 1922, when the organized machinists followed the customary union policy of penalizing those who are willing to work when labor officials decide to call strikes. Many at that time moved to other cities where they could be free to accept work, but the union's intelligence system succeeded in ferreting them out. Remission of these fines does not indicate a change of heart on the part of the executive council of the machinists' union. Rather, it means that the union's ranks have been depleted; it needs all the support it can get. Hence the forgiving spirit. Some of the methods of organized labor are strange to behold.

What Our Readers Are Thinking

Quality Winning Foreign Markets

IF WE examine the record of the world we shall see many interesting and stimulating things. Popping up in trade, in all directions, appear American goods pushed forward by American energy. . . .

We have revolutionized the machine-tool business of the world, and Europe is buying our high-speed mechanism in order to compete with us.

Our sales of industrial machinery in Italy show substantial increase; one-fourth of the machinery imported into Shanghai, in 1925, came from the United States. Japan is steadily increasing her orders; our shipments to the Dutch East Indies increased from $410,634 in 1913, to $1,454,854 in 1924. American machinery is in strong demand in Germany, and out of $43,000,000 worth of machinery imported by the United Kingdom in 1925, we furnished a third. This is more than double the value absorbed in 1913, in spite of the fact that British machinery is our most serious competitor in foreign markets, and we have had to meet strong competition in the British markets from continental manufacturers favored by depreciated exchange. No greater testimony could be offered of the quality of American product.

Our machinery sales to South Africa increased 80 per cent in 1923 over 1922, and 30 per cent in 1924 over 1923. In Peru our machinery dominates first, because of American investment and second, because the superiority of our product is generally recognized. In Brazil our heavy tools have little competition because of their superior qualities. In India much of our equipment is to be found in the newer plants, in some shops half of the large tools being from this country. In France and many other countries our machinery is used for manufacturing shoes, and in Egypt our cigarettemaking machinery is almost exclusively in operation.

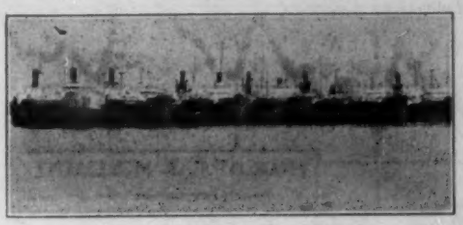
The business men of Great Britain know that greater efficiency must be injected into their work and particularly is this true in Manchester, where American typewriters, adding, listing and posting machines dominate the market. They are higher in price than British or German, but have the market because they are better. The same is true of American steel office furniture, files and so on.—C. C. MARTIN, *in his book, "Can We Compete Abroad?" published by National Foreign Trade council, New York.*

The Reader's Page

Vol. LXXIX, No. 15 IRON TRADE REVIEW Oct. 7, 1926

Ford Taking Initiative in Economic Experiments

VISIONS of a millenium, when man's hardest work will be to push a button, and let machinery do the rest, have been conjured up by some commentators on Henry Ford's five-day week working schedule. Whatever may be thought about the practicability of the plan, however, it must be conceded that Mr. Ford takes the initiative, and is willing to try out his theories in economics as well as his ideas in mechanics. His minimum $5 daily wage of 12 years ago, his experiments in aviation, the five-day week plan, and now his scrapping of three steel ships every five days, of the fleet that he bought from the government, are a few expressions of his originality of purpose and action. This issue of IRON TRADE REVIEW contains two articles on Ford's activities; the five-day week, with a background of working schedules over the last 25 years, and his experiment in scrapping ships.



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IRON TRADE REVIEW is published every Thursday by the Penton Publishing Co., Cleveland, O. Member, Audit Bureau of Circulation; Associated Business Papers, Inc.; and National Publishers Association.

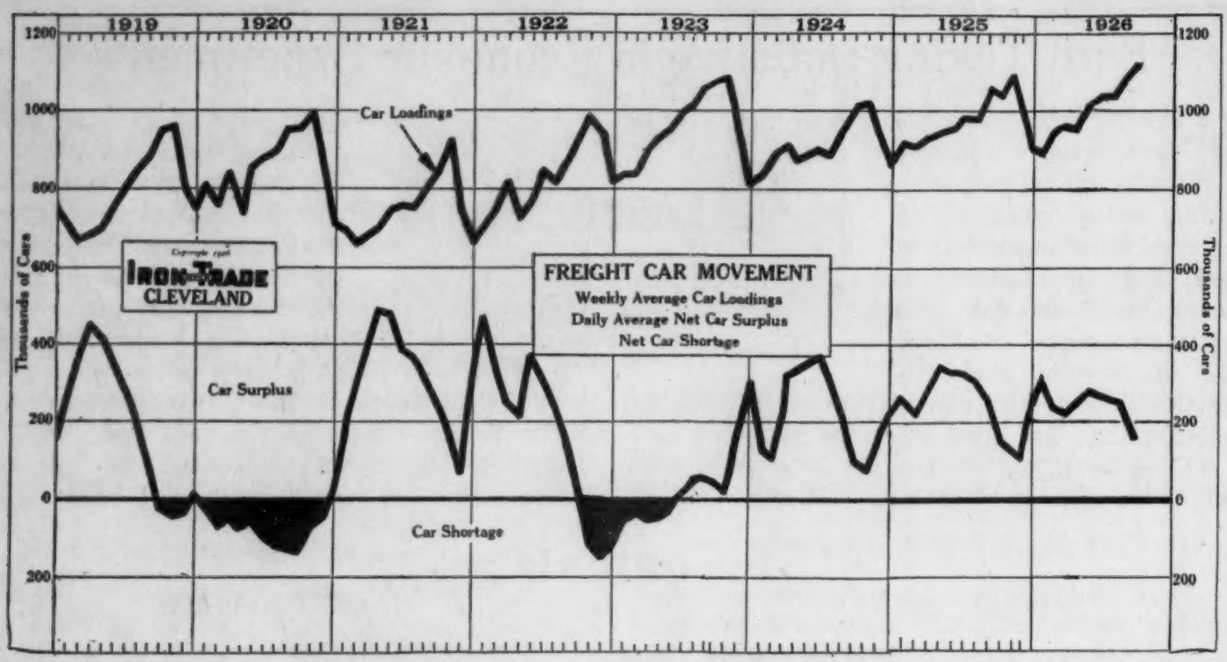
Charles J. Stark ..... Editor
Earl L. Shaner ..... Managing Editor
John D. Pease ..... Advertising Director
Francis F. Light ..... Circulation Manager

Branch offices 1037 Old South Bldg., Boston; 1147 People's Gas Bldg., Chicago; 408 Edwards Bldg., Cincinnati; 2203-2206 No. 220 Broadway, New York; 2148-49 Oliver Bldg., Pittsburgh; 24 California street, San Francisco; 1653 Pennsylvania avenue, Washington. Foreign offices: Prince's Chambers, Birmingham, Eng.; 2-3 Caxton House, Westminster S. W. 1, London; 23 Rue de la Bienfaisance. Paris, France; Kurfurstendamm 136, Berlin-Halsensee, Berlin, Germany.

Cable address: *PENTON*, Cleveland; *IROTRAPEN*, London.

Terms: Subscription in United States, Cuba and Mexico, $6 per year; in Canada, $8.50 per year and in Great Britain and other countries, £2:0:0 per year. *Entered at the Postoffice at Cleveland as Second Class Matter.* *Copyright 1926 by the Penton Publishing Co.*

The Business Trend



Freight Car Shortage Possible

By JOHN W. HILL, Financial Editor

ONE present tendency which is deserving of careful attention is the declining curve of the number of idle railroad freight cars. Earlier in the year the railroads reported almost 275,000 cars on their hands above needs of shippers. This figure has been reduced in recent weeks and the total surplus as last reported was 160,000 cars.

WITH the autumn traffic well under way the margin of idle cars promises to be even more rapidly absorbed. Car loadings in the week ended Sept. 18 totaled 1,187,000 cars. This was the highest weekly record in the history of the country and it was all the more remarkable because the peak of loadings usually does not come until later in the year. October traffic probably will see even higher levels.

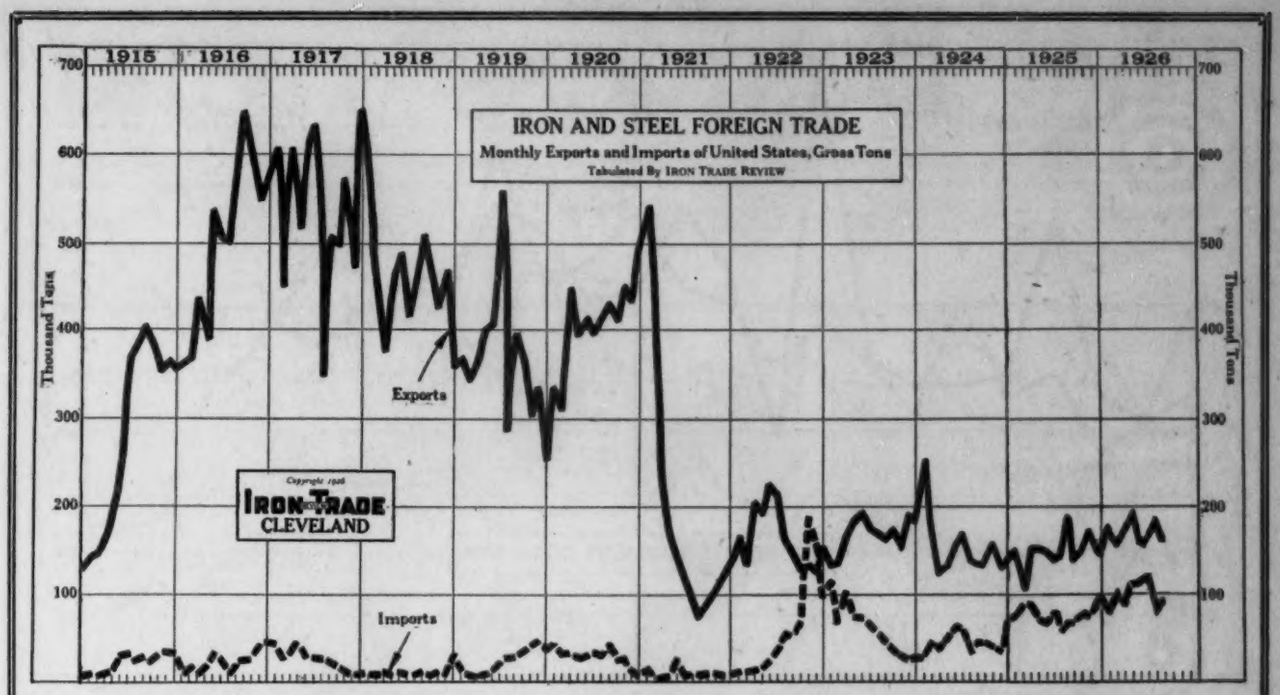
SINCE the first of the year the number of cars loaded shows an increase of 3.5 per cent over the loadings for the same period of 1925. Compared with the corresponding period of 1924 there is a gain of nearly 13 per cent. Because of these huge totals and the decline in idle cars, the American Railway association has just broadcasted a warning of a possible car shortage this fall.

IN THE coal industry there is even now some difficulty in some sections of obtaining sufficient numbers of cars to meet demand. A severe shortage of freight facilities would have an unbalancing effect upon general business.

IT WOULD tend to disturb the equilibrium now existing between production and consumption. A shortage of cars would create an illusion of a shortage of goods and the effect of this upon steady prices and conservative buying would be decidedly unsettling.

ONE of the important agencies in distributing business activities over the year has been efficient railroads. Prompt deliveries have contributed to hand-to-mouth purchases and the general stabilization of prosperity. Even if no great shortage appears, it seems clear that the railroads are in need of added equipment for emergencies. Meanwhile big traffic and ample financial returns should aid in bringing the railroads into the market for new equipment without any great further delay.

The Business Trend

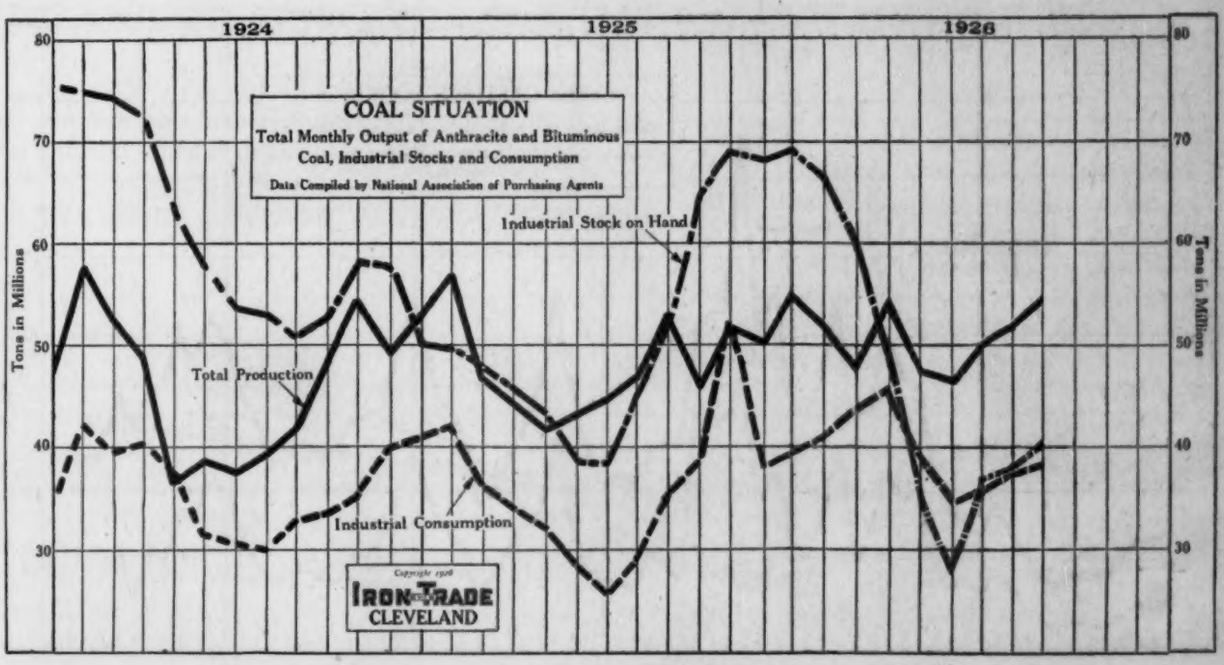


Steel Foreign Trade

AUGUST foreign trade for iron and steel products was lacking in spectacular developments. There was, however, an increase for imports and a decrease for exports. Imports for the month totaled 91,578 tons compared wih 82,411 tons in July and 68,489 tons in August, 1925. Exports for the month amounted to 171,588 tons, a decrease from the 194,717 tons in July. The figure also was less than the 188,465 tons for August, 1925. Pig iron imports in August were 26,538 tons.

Coal Situation

THE coal situation recently has been showing some improvement the result of increased industrial activity, and greater export demand due to the British coal strike. According to the computation of the National Association of Purchasing Agents, production of anthracite and bituminous coal in August amounted to 54,577,000 tons compared with 51,901,000 in July. Industrial consumption of coal in August was 37,652,000 tons compared with 37,024,000 tons in July and 35,541,000 tons in June.



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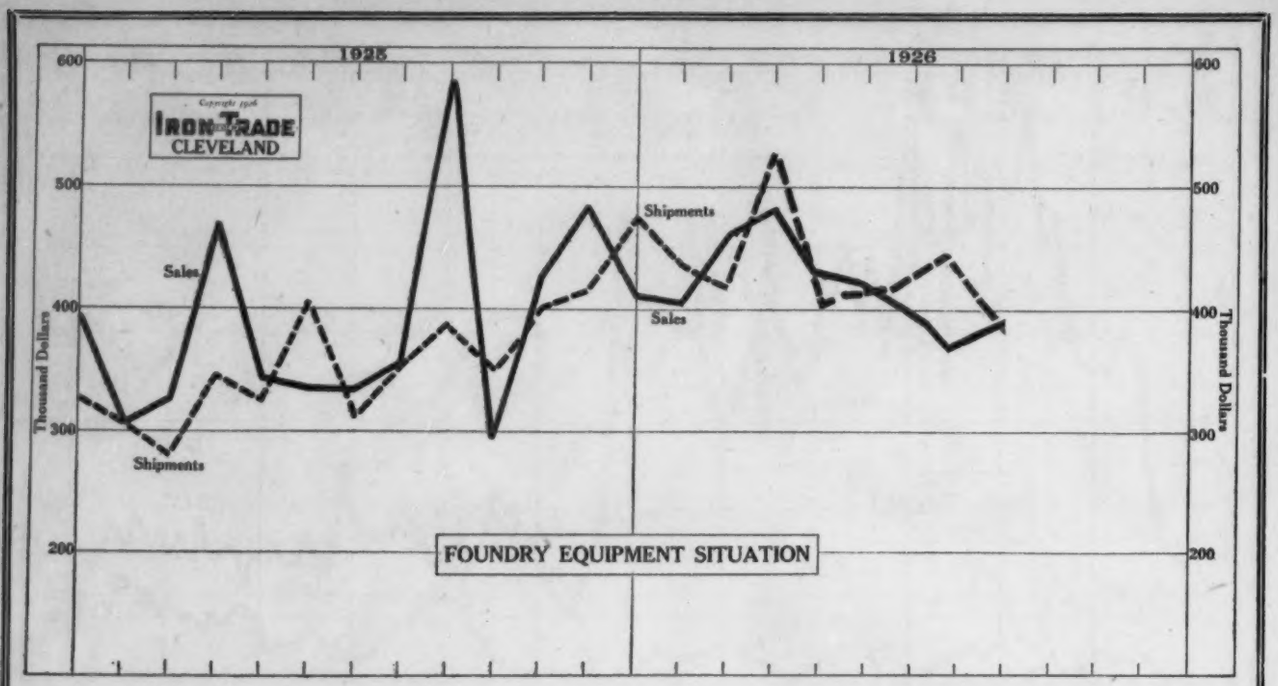
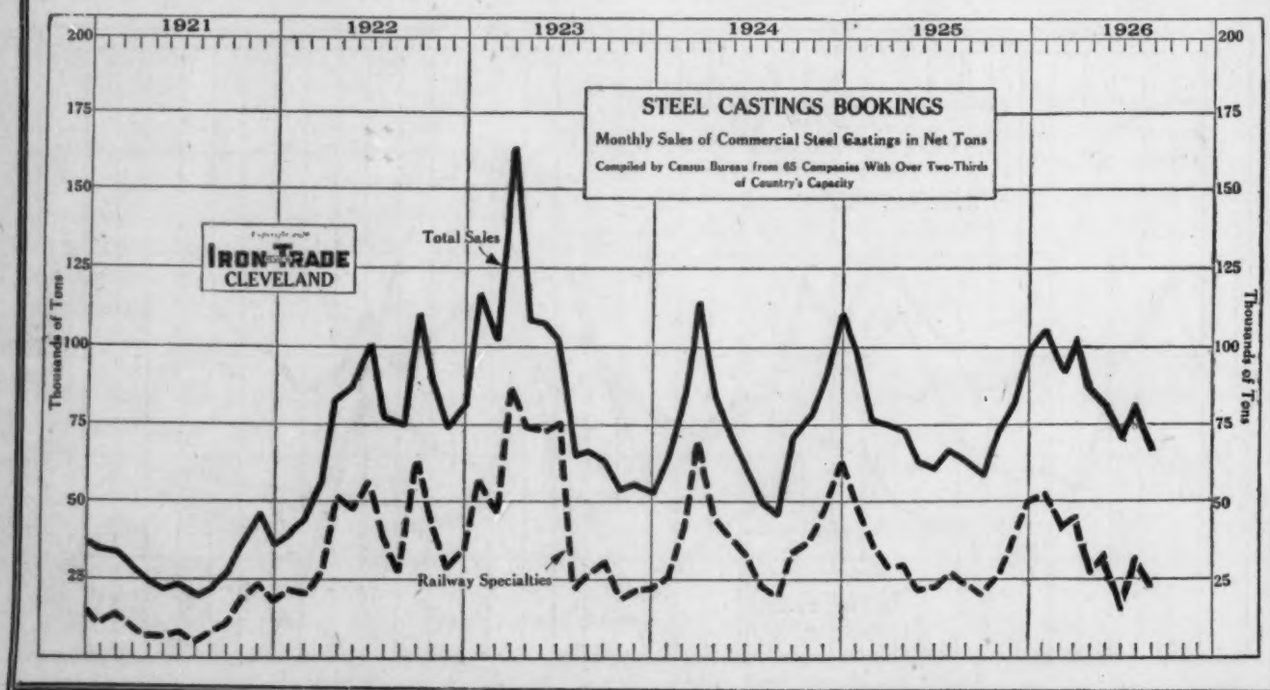


Foundry Equipment

AUGUST brought an increase in sales as reported by the Foundry Equipment Manufacturers association. The total for the month shown by 13 companies was $391,935 compared with $378,163 in July as reported by 14 companies. In August 1925 sales were $328,995, the gain this year over the corresponding month one year ago being 19 per cent. Shipments in August declined to $384,624 compared with $448,390 in July and $412,057 in August, 1925. Orders on hand on Sept. 1 totaled $422,148.

Steel Castings

BOOKINGS of steel castings in August, as reported to the department of commerce by leading manufacturers were 51 per cent of shop capacity against 57 per cent in July and 51 per cent one year ago. Total bookings amounted to 65,822 net tons compared with 74,430 net tons in July and 63,606 tons in August, 1925. Of the full amount 22,773 net tons represented railway specialties. This compared with 29,258 tons in July and with 23,130 tons in August one year ago.



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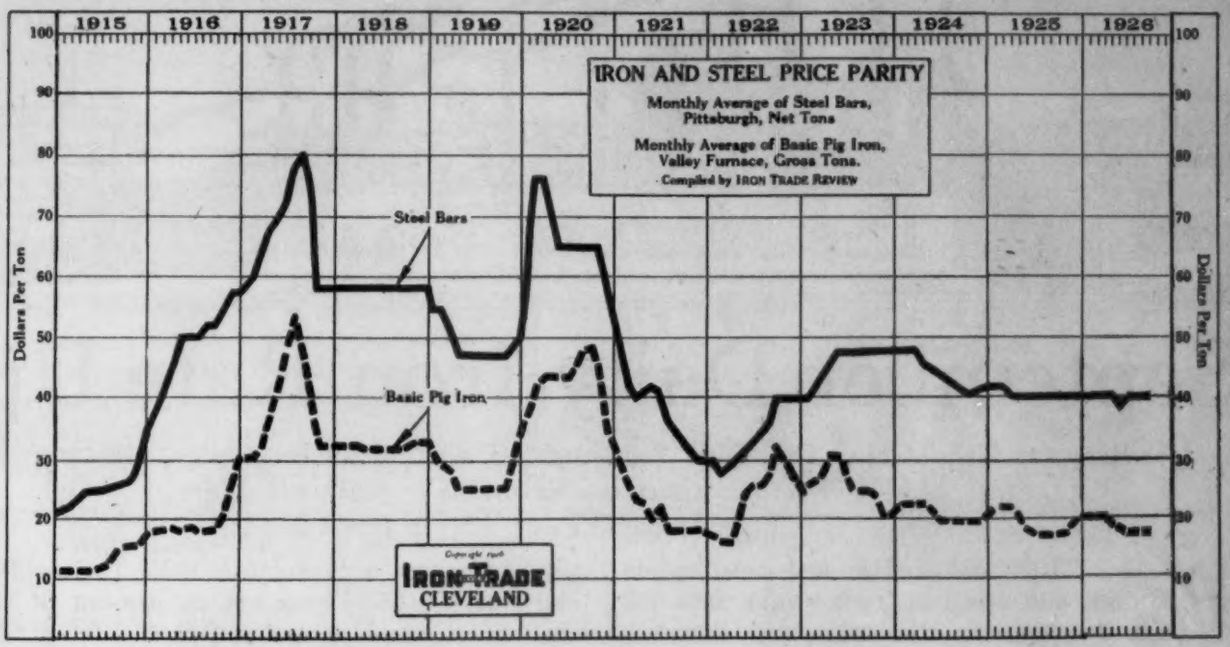
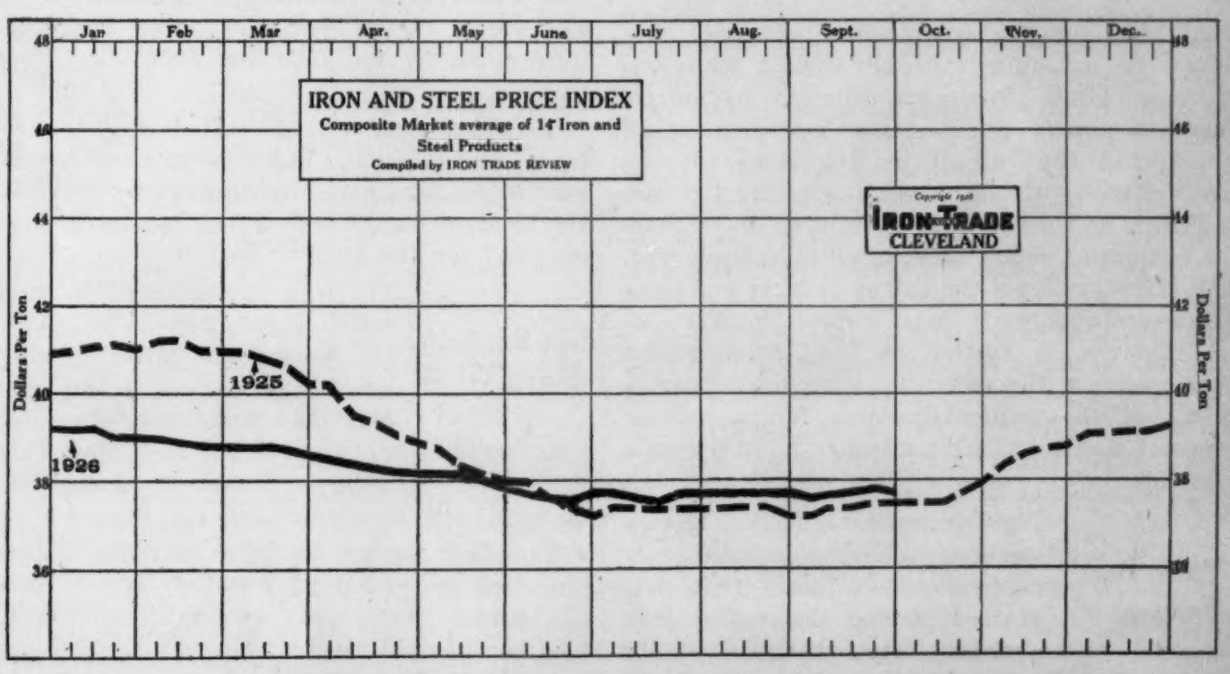


Steel Price Parity

STEEL bars at Pittsburgh dropped to $38 a ton in June, only to recover shortly thereafter to $40 a ton. The price of $40 a ton has continued to hold. Basic valley pig iron, however, has not recovered from its low point during the summer although at $17.50 a ton it is holding at the level which prevailed in August. The spread between steel bars and pig iron continues to be $22.50 a ton. One year ago steel bars were at $39 a ton and basic iron was at $18.25 making a spread of $20.75 a ton.

Steel Price Index

IRON and steel prices as represented by IRON TRADE REVIEW composite market average of 14 leading products have been generally firm in recent weeks. The composite stood at $37.61 in August and in the week of Sept. 22 it had advanced to $37.86. The following week this figure gave ground slightly to $37.82. Strength continues to be maintained in finished and semifinished material. The scrap market also has developed more pronounced weakness, leading grades having fallen from 50 cents to $1 a ton.



September Daily Iron Rate Up

Registers Gain of 2137 Tons Over August and Is Best September Since 1918—
Steel Market Factors Continue Favorable — Railroads More
Active—Tin Plate Demand Eases—Scrap Is Weaker

PRODUCTION, distribution and consumption of iron and steel all have swung into the fourth quarter on the high level that has obtained over the last 60 days. September developed an increase in the daily rate of pig iron production and October has opened with an additional stack in blast. Some independent mills produced and shipped more finished steel in August and September than ever before in those months and foresee no change in the rate this month. Steel corporation subsidiaries as a whole are operating a point or two higher. Spectacular developments are lacking but the iron and steel markets jog along on a comfortable basis, with producers maintaining prices and consumers providing a steady inflow of current requirements. The majority of market factors continues decidedly favorable.

At the moment, order books of steel producers do not quite faithfully reflect conditions of consumption. Producers generally having refused to extend third quarter contracts priced lower than the current market, some tonnage users have withheld their contracts and are operating on the carryover from their third quarter contracts, which they specified entirely out. This carryover is not thought to be large and these consumers apparently must become market factors shortly. A further show of firmness has been made by the mills in quoting open market prices on the moderately large fourth quarter needs of the New York Central and Pennsylvania railroads.

Third Best September

Pig iron made production history last month, having exceeded every September save those of the war years 1916 and 1918. The daily average rate reached 105,386 tons, compared with 103,249 tons in August and only 90,862 tons in September, 1925. The month's total was 3,161,604 tons but on account of the handicap of one less day fell just short of the 3,200,723 tons made in August. Output last September was only 2,725,885 tons. October opened with 216 stacks, or 58.2 per cent of the total serviceable, in blast. A gain of one stack over Sept. 1 was made possible by the lighting of the new Everett, Mass., stack, 10 having been dropped and 10 brought in last month.

Roads Place 3335 Cars

With 3335 freight cars placed, September was the best month since June for car builders. For the year to date car orders total 44,620 and it is estimated at Chicago that 25,000 more will be placed this year. In this event, 1926 will fall just short of 1925. The Louisville & Nashville is definitely out for 1500 cars. Two western carriers are expected to inquire shortly for 7500 and 6000 cars, respectively.

Structural steel awards still drag, in spite of fairly heavy inquiry, but placements of concrete reinforcing bars have been heavy the past week, the total of 12,220 tons being the third largest recorded for the year to date.

Iron Stronger, Scrap Weak

Pig iron is featured by firmer prices, particularly in the Mahoning Valley and eastern Pennsylvania, and heavier selling in all districts. Some good-sized basic needs have been covered in the Mahoning Valley. Iron and steel scrap is weaker in all consuming districts, and consumers are not buying.

The sheet market continues to reflect a better tone and the recent $2 advance is more firmly established. Some consumers in the automotive field have sought coverage through the first quarter of 1927 but the mills won over to hand-to-

mouth buying, refuse to commit themselves that distance ahead. The insistent demand that has characterized the tin plate market for many months is moderating, doubtless reflecting adverse weather and crop conditions facing some portions of the packing industry.

In some quarters, it is expected that the formation of the European iron and steel trust will have a sequel in curtailed exports to the American market.

IRON TRADE REVIEW composite of 14 leading iron and steel products registers a gain for the fifth consecutive week, being $37.85 compared with $37.82 last week.

Prices, Present and Past

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Oct. 6, 1926	Sept. 1926	July 1926	Oct. 1925
PIG IRON				
Bessemer, valley, del., Pittsburgh	$20.76	19.96	20.46	21.46
Basic, valley	17.50	17.30	17.50	18.70
Basic, eastern del., eastern Pa.	20.75	20.76	21.00	20.50
*No. 2 foundry, del., Pittsburgh	19.76	19.46	19.56	20.96
No. 2 foundry, Chicago	21.00	21.00	21.00	21.60
*Southern No. 2, Birmingham	20.00	20.80	21.00	19.50
*Southern Ohio, No. 2 Ironton	20.00	20.00	19.50	19.60
**No. 2X, Virginia furnace	22.75	23.00	22.75	23.00
**No. 2, eastern del., Phila.	22.76	22.26	22.26	22.61
Malleable, valley	18.00	17.70	17.80	19.20
Malleable, Chicago	21.00	21.00	21.00	21.60
Lake Superior charcoal, Chicago	27.04	29.04	29.04	29.04
Gray forge, val., del., Pittsburgh	19.26	19.11	19.11	20.46
Ferromanganese, del., Pittsburgh	99.79	92.79	92.79	119.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville furnace, ovens	3.40	3.25	2.65	5.65
Connellsville, foundry, ovens	4.25	4.15	3.70	5.95
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	36.00	36.00	36.00	35.00
Sheet bars, open-hearth, Pittsburgh	36.00	36.00	36.00	35.00
Billets, open-hearth, Pittsburgh	35.00	35.00	35.00	35.00
Wire rods, Pittsburgh	45.00	45.00	45.00	45.00
FINISHED MATERIAL				
Steel bars, Pittsburgh	2.00	2.00	2.00	2.00
Steel bars, Chicago	2.10	2.10	2.10	2.10
Steel bars, Philadelphia	2.32	2.27	2.32	2.27
Iron bars, Philadelphia	2.27	2.22	2.22	2.12
Iron bars, Chicago, mill	2.00	2.00	2.00	1.90
Beams, Pittsburgh	2.00	2.00	2.00	1.90
Beams, Philadelphia	2.27	2.22	2.32	2.17
Beams, Chicago	2.10	2.10	2.10	2.10
Tank plates, Pittsburgh	1.90	1.90	1.90	1.80
Tank plates, Philadelphia	2.22	2.22	2.22	2.02
Tank plates, Chicago	2.10	2.10	2.10	2.10
Sheets, black, No. 24, Pittsburgh	3.00	3.05	3.10	3.10
Sheets, blue anl., No. 10, Pittsburgh	2.30	2.30	2.30	2.25
Sheets, galvanized, No. 24, Pittsburgh	3.85	3.95	4.30	4.25
Sheets, black, No. 24, Chicago	3.20	3.15	3.25	3.35
Sheets, blue anl., No. 10, Chicago	2.50	2.45	2.45	2.45
Sheets, galvanized, No. 24, Chicago	4.05	4.00	4.45	4.45
Wire nails, Pittsburgh	2.65	2.65	2.65	2.65
Wire nails, Chicago	2.70	2.70	2.70	2.70
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
OLD MATERIAL				
Heavy melting steel, Pittsburgh	17.00	17.75	16.70	18.40
Heavy melting steel, eastern Pa.	16.75	16.85	15.50	17.00
Heavy melting steel, Chicago	13.25	14.10	14.20	16.25
No. 1 wrought, eastern Pa.	17.00	17.00	17.00	18.25
No. 1 wrought, Chicago	14.75	14.55	14.80	16.30
Rails for rolling, Chicago	17.00	17.25	17.10	18.55

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (Oct. 6, 1926)	37.85
Last week (Sept. 29, 1926)	37.82
One month ago (September, 1926)	37.76
Three months ago (July, 1926)	37.68
One year ago, (October, 1925)	37.61
Ten years ago, (October, 1916)	41.50
Thirteen years ago, (October, 1913)	24.91

Late News Flashes

Business to Continue Good, Says Gary

New York, Oct. 5.—Business is good and will probably so continue for some time, said Judge E. H. Gary, chairman, United States Steel Corp. In support he said the corporation's present ingot rate is about 86 per cent, September bookings are slightly heavier than shipments, and unfilled tonnage should show a gain. Corporation bookings are averaging 42,000 tons daily.

"All in all, business conditions are very satisfactory; certainly they are better than we had reason to feel at the beginning of the year," said Judge Gary.

Judge Gary quoted a banker, whom he believes one of the most prominent, as saying recently that business conditions would continue good through the remainder of this year and possibly throughout next year. Only crop failure or war or some such unforeseen development could interfere, is this banker's opinion.

Asked concerning an over-capacity for steel production Judge Gary said, "maybe in some places and in some lines but certainly not on the average."

Pittsburgh Maintains 85 Per Cent Gait

Pittsburgh, Oct. 5.—Steel mill operating schedules keep up well here, general average being 84 or 85 per cent. Some finishing mills are 90 per cent or slightly higher. American Sheet & Tin Plate Co. for second consecutive week kept its hot mill average above 90 per cent—tin plate being 92 and sheets 91. Strip steel averages 80 to 85 per cent, nuts, bolts and rivets 70, cold finished bars 60 to 65 and wire 50 to 60.

Carnegie Steel Co. keeps 34 out of 51 blast furnaces active, while Jones & Laughlin Steel Corp. has 11 out of 12 blowing. Stewart Iron Co. shortly will blow in its stack.

Trust Advances European Steel Prices

Washington, Oct. 5.—Export price of merchant steel has been increased 15 shillings sterling, or $3.65 per ton, by the new European iron and steel trust, according to a cable to the department of commerce from Commercial Attache Jones at Paris. The f.o.b. Antwerp price has been advanced 10 shillings, or $2.43, while the French domestic price is now 940 francs, or about $26, an increase of 140 francs, or about $3.85.

Rails No Help to Ingot Rate

Chicago, Oct. 5.—Steelworks operations continue unchanged at 84 per cent, recent rail orders not yet exerting any influence. Twenty-five of the 36 steelworks blast furnace stacks are active.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$35.00
Pittsburgh, bessemer	35.00
Youngstown	35.00
Philadelphia	40.30
Chicago	35.00
Forging, Pittsburgh	40.00
Forging, Philadelphia	44.30 to 45.30

SHEET BARS

Pittsburgh	$36.00
Youngstown	36.00

SLABS

Pittsburgh	$35.00
Youngstown	35.00

WIRE RODS

Pittsburgh	45.00
Cleveland	45.00
Chicago	46.00

Standard extras, $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp	1.90c
Universal skelp, Pittsburgh	1.90c
Sheared skelp, Pittsburgh	1.90c

Structural Shapes

Pittsburgh	2.00c to 2.10c
Philadelphia	2.17c to 2.32c
New York	2.19c to 2.34c
Chicago	2.10c
Cleveland	2.19c
Birmingham	2.15c to 2.25c

Steel Plates

Pittsburgh	1.90c
Philadelphia	2.22c
New York	2.24c
Chicago	2.10c
Cleveland	2.09c
Birmingham	2.05c to 2.15c

Iron and Steel Bars

Pittsburgh, soft steel	2.00c to 2.10c
Pittsburgh, cold finishing	2.15c
Pittsburgh, forging quality	2.15c
Philadelphia, soft steel	2.32c
New York, soft steel	2.34c
Chicago, soft steel	2.10c
Cleveland, soft steel	2.19c
Birmingham, soft steel	2.15c to 2.25c
San Francisco, soft steel	2.60c
Pittsburgh, refined iron	3.00c to 4.50c
Pittsburgh, reinforcing billet	2.00c to 2.10c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	2.00c
Mill, rail steel	1.80c
Philadelphia, common iron	2.22c to 2.32c
New York, common iron	2.24c to 2.34c
Chicago, common iron	2.00c

Hoops, Bands, Strips

Hoops, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh over 6 in.	2.30c
Hot rolled strip steel, Pittsburgh, stamping quality, over 6 in.	2.30c
Hot rolled strip steel, Chicago	2.50c to 2.60c
Bands, Chicago, under 6 inches	2.60c
Bands, Chicago, 6 in. and over	2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh	3.50c to 3.60c
Worcester Mass	3.90c
Chicago	3.90c to 4.05c

Cold Finished Steel

Cold finished steel bars, drawn, or rolled, Pittsburgh, Chicago carloads	2.50c
Less carload	2.75c
Steel shafting turned and polished Pittsburgh, Chicago	2.60c

Screw stock base Cleveland $1 higher than Pittsburgh and Chicago.

Hot Rolled Alloy Steel

Pittsburgh or Chicago

S. A. E. Series—

2300 (3½ per cent nickel)	4.40c to 4.50c
3100 (Nickel chromium)	3.40c to 3.50c
6100 (Chrome vanadium)	4.25c to 4.30c
6100 (Chrome vanad. spring)	3.85c
9250 Silico-mang. spring)	3.25c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relaying rails, Pittsburgh	23.00 to 25.00
Light rails, 25 to 45, mills	36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c to 2.90c
Spikes, small railroad, 7-16-inch and smaller, Pitts.	2.90c to 3.00c
Spikes, boat and barge, Pitts.	3.10c
Spikes, railroad, Chicago	2.90c
Track bolts, Pitts. standard	3.90c to 4.25c
Track bolts, Chicago	3.90c
Tie plates, Chicago	2.35c
Tie plates, Pittsburgh	2.35c

Wire Products

To Jobbers in Carloads

Dealers 5 cents per 100 pounds extra F.o.b. Cleveland and Pittsburgh base.

Wire nails	2.65c
Galvanized nails smaller than 1-inch	4.90c
Galv'd nails, 1-inch and over	4.65c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire, No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
Polished staples	3.10c
Galvanized staples	3.35c

Coated nails, 100 pound kegs, subject to card of extras Sept. 1, 1926, over regular wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts.	$20.03

Joliet, DeKalb and Waukegan, Ill., and Anderson, Ind., prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

Sheets

SHEET MILL BLACK

No. 24, Pittsburgh, base	3.00c to 3.10c
No. 24, Philadelphia, delivered	3.32c to 3.42c
No. 24, Gary, Indiana Harbor	3.20c
No. 24, Chicago, delivered	3.25c

TIN MILL, BLACK

No. 28, Pittsburgh	3.25c
No. 28, Gary base	3.35c

GALVANIZED

No. 24, Pittsburgh, base	3.85c to 3.95c
No. 24, Philadelphia, delivered	4.17c to 4.27c
No. 24, Gary, Indiana Harbor	4.05c
No. 24, Chicago, delivered	4.10c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.30c to 2.40c
No. 10, Philadelphia, delivered	2.62c to 2.72c
No. 10, Gary, Indiana Harbor	2.50c
No. 10, Chicago, delivered	2.55c

AUTOMOBILE SHEETS

No. 20, Pittsburgh, base	4.25c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.50

Gary, Ind., base 10 cents higher.

Long ternes, base	4.65

*This price is subject to quantity differentials established by individual regulations.

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less and $4 per ton higher. Chicago delivered 2½ points less and $5 per ton higher.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	68½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled 3¼ to 3½-inch	46 off

Additional discounts of seven 5 per cents being allowed for carloads and six 5 per cents for less-carload, on Japanned steel. On seamless hot rolled several additional 5 per cents are allowed.

Chain, Piling, Cut Nails

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c to 2.30c
Cut nails, c. l., f.o.b. mills	2.80c

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$51.20 to 52.20
Six-inch to 24-inch, Chicago	47.20 to 49.20
Over 24-inch, Chicago	45.20
Four-inch, Birmingham	43.00 to 44.00
Six-inch and over, Birming'm	39.00 to 40.00
Four-inch, New York	56.50 to 57.60
Six-inch and over, New York	51.50 to 52.60
Standard fittings, Birmingham base	$110.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B

Nuts and Bolts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Hot pressed square tapped or blank	$4.00 off list
Hot pressed hexagon tapped or blank	$4.40 off list
Cold punched square or hexagon blank	$4.10 off list
Cold punched square or hexagon tapped or blank	$4.10 off list
Cold punched U. S. S. semifinished hexagon nuts ⅝-inch and larger	75, 10 and 5 off
Cold punched U. S. S. semifinished hexagon nuts 9/16-inch and smaller	80, 10 and 5 off
Cold finished S. A. E. semifinished ⅝-inch and larger	75, 10, 10 and 5 off
Cold finished S. A. E. semifinished 9/16-inch and smaller	80, 10, 10 and 5 off

CARRIAGE BOLTS

(⅝ x 6-inch, smaller and shorter)

Rolled thread	50, 10 and 10 off
Cut thread (all sizes)	50 and 10 off
Eagle carriage bolts (Eagle list)	65 and 10 off

MACHINE BOLTS

(⅝ x 4-inch, hot pressed nuts)

Rolled thread	60 and 10 off
Cut thread	45, 10 and 5 off

(All sizes cold punched nuts)

Cut thread	45 10 and 5 off
Lag screws	60, 10 and 10 off
Plow bolts Nos. 5 and 7 heads	50 and 10 off
All other standard heads	50 and 10 off plus 20 per cent
Tap bolts	30 off
Bolt ends with hot pressed nuts	50, 10 and 10 off
Bolt ends with cold punched nuts	45, 10 and 5 off
Blank bolts	50, 10 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size)	40 and 10 off

Stove bolts, 80, 10 and 5 off in bulk. In packages, 80, 10 and 5 plus 2½ off.

Tire bolts	60 and 5 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, f.o.b. producer's plant, freight allowed

	S.AE. Castellated	U.S.S. Slotted
¼	$ 4.40	$ 4.40
5/16	5.15	5.15
⅜	6.20	6.60
7/16	7.90	9.00
½	10.10	10.50
9/16	13.80	14.20
⅝	17.00	17.30
¾	28.50	24.00
⅞	36.00	36.00
1	55.50	58.00
1⅛	89.00	89.00
1¼	126.00	131.00
1⅜	183.50	183.50
1½	210.00	210.00

Larger sizes—Prices on application

HEXAGON CAP SCREWS

Milled	80 and 10 off
Upset	80, 10 and 10 off

SQUARE HEAD SET SCREWS

Milled	80 and 5 off
Upset	80, 10 and 5 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.50c to 2.60c
Structural rivets, carloads, Chicago	2.60c to 2.75c
**Rivets, 7/16-inch and smaller, Pittsburgh, Cleveland, 70, 10 and 5 to 70 and 10 off.	
**Rivets, 7/16-inch and smaller, Chicago	70, 10 and 5 to 70 and 10 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.40 to 6.50 off
Wrought c.l., Pitts. dist	6.75 off
Lock washers, f.o.b. factory	85 to 90 off

Pig Iron

Valley Market Makes Definite Advance on Several Grades — Eastern-Pennsylvania Higher—Large Basic Tonnages Booked

THE pig iron market is stronger, with several important changes in the valley situation. More makers have joined the group quoting basic $18, foundry and malleable $18.50 and bessemer $19, base, valley. Bessemer now is $19, minimum. There are but one or two sources from which foundry and malleable grades still are obtainable at $18. One merchant interest still has out a quotation of $17.50 on a large inquiry for basic, and contemplates raising its price to $18. The price of low phosphorus iron is up 50 cents to $28, valley, minimum. Eastern Pennsylvania producers generally have advanced their prices 50 cents to $21.50, base, furnace. Sales are in good volume, featured by the booking of round lots of basic for fourth quarter.

PITTSBURGH, Oct. 5—The pig iron market retains its strength, despite the lack of open inquiry. Progress is being made toward clarification of the price situation, as another merchant producer has joined the group quoting basic iron at $18, foundry and malleable at $18.50, and bessemer $19, valley. Another interest that recently quoted $18 on foundry and malleable iron has resumed quoting $18.50, as it did several weeks ago, leaving but one or two sources available at $18 for these two grades. One merchant interest having out a quotation of $17.50, valley, on a large inquiry for basic contemplates raising its price to $18, minimum. The last sale it made at that figure, last week, involved 10,000 to 15,000 tons for an affiliated consuming interest. Bessemer iron now is $19, minimum. The largest inquiry pending is for 500 tons. Foundry inquiries involve only filling-in tonnages, although a few brokers are endeavoring to obtain larger lots.

W. P. Snyder & Co. report the average sales price of bessemer iron in September was $18.35, compared with $18.11 in August, while the basic figure for September was $17.50, against $17.417 in August.

Boston, Oct. 5.—Inquiry for first quarter pig iron is increasing. One Buffalo furnace is understood to be offering first half iron at $19, base furnace, equivalent to $23.91, delivered in New England. Prices are stiffening in Pennsylvania. One eastern Pennsylvania furnace recently advanced from $21 to a $21.50 base, furnace, with 50 cent differentials. Recent sales include 2000 tons to a Rhode Island consumer and 2000 tons to a foundry in Connecticut.

New York, Oct. 5.—Sales of pig iron in this district in the past week totaled about 10,000 tons. The Central Foundry Co. and the Essex Foundry bought a total estimated at 5000 tons. The New York Central railroad purchased 700 tons. The General Fire Extinguisher Co. is inquiring for 2000 tons. A New Jersey consumer is in the market for 2000 tons. Eastern Pennsylvania producers generally have advanced their price 50 cents and now quote $21.50, base, furnace. Buffalo furnace price is unchanged at $19, base, for delivery to this territory. Eastern New York and New England foundry iron prices are $20 to $21, base, furnace. A reduction of $2 in the price of Lake Superior charcoal iron in the past week brought heavy buying of that grade in this district, aggregating several thousand tons.

Philadelphia, Oct. 5.—More melters are buying pig iron. The Standard Steel Works Co. is believed to have closed on part of its inquiry for 2500 to 3000 tons of copper-free low phosphorus. Several other consumers are negotiating for their low phosphorus requirements. Two tonnages of basic also are under negotiation. Virginia pipemakers bought 10,000 tons of Virginia foundry iron in the past week. Delaware river pipemakers bought various lots aggregating at least 5000 tons. The J. L. Mott Co. inquired for 2000 tons of foundry iron for first quarter. Several lots have been closed for first quarter, and several inquiries for that period are pending. Current prices are $21.00 to $21.50, base eastern Pennsylvania furnace, for this quarter, and $21.50 to $22, base, furnace, for first quarter. The Bethlehem Steel Co. will blow in another stack at Steelton within a week.

Buffalo, Oct. 5.—Inquiry for pig iron totals about 10,000 tons. A consumer in New York state wants 3000 tons of foundry iron. A Buffalo user wants 2000. The General Electric Co. bought 1000 tons here for Elmira. The prices of $20 base, on Buffalo business seems to be holding firm. Fifteen furnaces are in blast with prospect of an increase to 16 toward the end of this month.

Youngstown, O., Oct. 5.—While pig iron sales have not been more numerous than in previous weeks, the market here is showing a tendency to firm up. Shipments are good. No. 2 foundry is around $18 but tending to rise; basic is available in tonnages at $17.50; and bessemer is somewhat uncertain but between $18.50 and $19, although this latter quotation failed to bring business a few days ago.

Cleveland, Oct. 5.—Pig iron market shows a slight pick up in volume of sales. Some users of basic have closed with their regular sources of supply for round tonnages for fourth quarter, and with these additions to sales of foundry and malleable grades, the total booked by furnace interests with headquarters here is approximately 50,000 tons for the week. Larger buying of foundry and malleable is indicated, and several important melters are expected to close for fourth quarter within the next week or two. The market is firm, but efforts to obtain more on first quarter sales generally are unsuccessful. Furance interests are not keen to commit themselves, at present

(*Concluded on Page* 945)

Pig Iron Prices

Prices per gross ton

Bessemer, valley	$19.00
Bessemer, Pittsburgh	20.76
Basic, valley	17.50 to 18.00
Basic, Pittsburgh	19.26 to 19.76
Basic, Buffalo	19.00 to 19.50
Basic, del., eastern Pa.	20.75 to 21.25
Malleable, valley	18.00 to 18.50
Malleable, Pittsburgh	19.76 to 20.26
Malleable, del., Cleveland	19.50
Malleable, Chicago	21.00
Malleable, Buffalo	19.00 to 20.00
Malleable, del., eastern Pa.	22.25 to 22.75
No. IX, Eastern del., Phila.	22.76 to 23.39
No. IX, Buffalo	20.50 to 21.00
No. 1 foundry, Chicago	21.50
No. 2 foundry, valley	18.00 to 18.50
No. 2 foundry, Pittsburgh	19.76 to 20.26
No. 2 foundry, Buffalo	19.00 to 20.00
No. 2 foundry, Chicago	21.00
No. 2 foundry, Granite City	22.00 to 22.50
No. 2 foundry, Ironton	20.00
No. 2 foundry, del., Cleveland	19.50
No. 2 foundry, del., Phila.	22.39 to 23.26
No. 2 foundry, N. J., tidewater	22.39 to 23.26
No. 2X, eastern del., Phila.	22.26 to 22.89
No. 2X, east N. J., tidewater	22.89 to 23.76
No. 2X, foundry, Buffalo	20.00 to 20.50
No. 2X, eastern del., Boston	23.90 to 24.65
No. 2X, Buffalo, del., Boston	23.91 to 24.41
Continental foundry f.o.b. Boston	19.50 to 20.50
India, 2.25 to 2.75 silicon, delivered cars, Boston	20.00 to 21.00
No. 2 Alabama, Birmingham	20.00
No. 2 Alabama, del. Cincinnati	23.69
No. 2 Tenn., Birmingham	21.00
No. 2 Tenn., del. Cincinnati	23.69
No. 2 Alabama, del. Philadelphia	26.01
No. 2 Alabama, del. Chicago	26.01
No. 2 Alabama, del Chicago (barge and rail)	25.18
No. 2 Alabama, del. Boston (rail and water)	26.81
No. 2 Alabama, del. Cleveland	26.01
No. 2 Alabama, del. St. Louis	24.42
No. 2X, Virginia	22.50 to 23.25
No. 2X, Virginia, Phila	27.67 to 28.42
No. 2X, Virginia, del Jers. City	28.04 to 28.79
No. 2X, Virginia, del. Boston	28.42 to 29.17
Gray forge, eastern Pa.	20.75
Gray forge, val. del. Pitts.	19.26
Low phos., standard, valley	28.00
Low phos., standard, Phila.	24.26 to 24.76
Low phos., Lebanon	23.00 to 24.00
*Low phos., English (nominal)	24.01 to 24.51
Charcoal, Birmingham	29.00 to 30.00
Charcoal, Superior, Chicago	27.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $24.50; 6 per cent $25.50; 7 per cent $26.50; 8 per cent $27.50; 9 per cent $29.00; 10 per cent $31.00; 11 per cent $33.00; 12 per cent $35.00; 13 per cent $37.00; and 14 per cent $39.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $33.00; 11 per cent $35.00; 12 per cent $37.00; 13 per cent $39.00; 14 per cent $41.00; 15 per cent $44.00; 16 per cent $46.00; 17 per cent $48.50.

*Duty paid, delivered Philadelphia consumers. Prices are f.o.b. furnace except where stated ohterwise.

Coke

Spot Prices Slightly Easier, But Tone Is Strong—Labor Scarce and Wages Higher

THE coke market generally reflects a strong undertone, but slight temporary weakness has developed in Connellsville spot prices due to the lighting of additional ovens by small producers. A shortage of workers is preventing larger operations from expanding. A reported wage advance also is a factor for stronger prices.

Pittsburgh, Oct. 5.—Increasing scarcity of high-grade beehive coke may delay the blowing in of the Stewart Iron Co.'s stack. It is understood this buyer is unable to locate one source of supply even at the prevailing high figures. A shortage of miners and oven workers in the region is preventing some large operations from expanding although some smaller coke producers are putting on 20 to 50 ovens at a time. This latter tendency is creating a temporary weakness in the spot market, since small blocks again were offered in the past few days to brokers at $3.25 and $3.35, and sold by them at $3.35 to $3.50. Other spot market transactions involving 15 to 20 carloads at a time brought $3.50 to $3.75, and indicate what has to be paid when fair or large tonnage is needed. One chemical interest is inquiring for 500 tons weekly and has been quoted that figure. The Rogers, Brown Iron Co. is reported to have closed, with other buyers recently, paying $3.50 minimum for extended deliveries. One eastern maker of low phosphorus iron paid $3.75. One or two cargoes for export involving up to 5000 tons brought $4. Foundry coke is selling at $4.50 to $5, figures below that minimum applying on fuel not strictly standard. Premium brands are up 25 cents, selling at $5.25 in gondolas and $5.50 in box cars.

Production of coke in the Connellsville region for the week ended Sept. 25 was 140,690 tons, compared with 136,210 tons the preceding week, according to the *Connellsville Courier*.

Boston, Oct. 5.—Demand for foundry coke in New England continues to show moderate improvement. The price quoted by both local by-product producers holds at $12, delivered. Spot tonnage commands $12.25.

New York, Oct. 5.—Due to a wage advance in the coke region, spot beehive foundry fuel now is $4.75 to $5.25, Connellsville, or 50 to 75 cents above the recent market. Spot furnace coke is $3.75 to $4. Buying is steady but small. By-product foundry coke is unchanged at $9.59 to $10.77, delivered at Newark and other northern New Jersey points.

Cincinnati, Oct. 5.—The Portsmouth By-Product Coke Co. has reduced its foundry grade 50 cents for October delivery. The Ashland, Ky., and Indianapolis producers have not altered their prices. Portsmouth is quoting $9.14, and Ashland $9.64, delivered Cincinnati, while the Indianapolis producer quotes $10.25. The outstanding sale of the week was 1000 tons of Wise country foundry coke to users in Illinois.

St. Louis, Oct. 5.—Effective Oct. 1, the price of domestic grades of coke was advanced 25 cents by the by-product ovens. Foundry coke is unchanged. Demand for domestic and foundry grades is active.

Birmingham, Ala., Oct. 5.—Many orders are on books of independent coke producers in Alabama and careful attention is being given to production and shipments. Quotations range up to $6 on spot foundry fuel. The market is strong.

Coke Prices

Beehive, Ovens

Prices per net ton

Connellsville furnace	$3.35 to 4.00
Connellsville foundry	4.50 to 5.00
New River foundry	6.50 to 7.00
New River furnace	4.50 to 5.00
Wise county furnace	4.00
Wise county foundry	4.50 to 5.00
Alabama foundry	4.50 to 5.50

By-Product

Foundry, Newark, N. J.; del.	$9.59 to 10.77
Foundry, Chicago, ovens	9.75
Foundry, New England, del.	12.00
Foundry, St. Louis	10.00
Foundry, Granite City, Ill.	10.00
Foundry, Birmingham	5.50 to 6.00
Foundry, Indianapolis, del.	10.25
Foundry, Ashland, Ky.	7.50
Foundry, Portsmouth, O.	7.00

Ferroalloys

Market Is Quiet — Ferromanganese Is Becoming Stronger

Pittsburgh, Oct. 5.—The ferroalloys market is quiet. Only single carload inquiries appear. Apparently the $88 price on ferromanganese does not apply to new business and is confined to the invoice price when billing out specifications against contracts for shipment over the remainder of the year. On new orders, it has been demonstrated this week that $95 applies since two single carloads have been booked by domestic makers at that figure, one for delivery in this vicinity. Contracts for the first half of 1927 are not being negotiated. Ferrosilicon consumption, as well as that of other alloys under contract continues at a high figure. The spiegeleisen producer anticipates a tight condition for some weeks, and possibly months as regards 19 to 21 per cent material. Its large furnace will be blown in shortly but it will be faced with the necessity of replenishing its customers' stocks, in addition to the taking care of new demands. One single carload order for the 16 to 19 per cent grade was taken here last week at $33.

New York, Oct. 5.—Deliveries of ferromanganese and spiegeleisen on contracts continue heavy, and there is no surplus of these metals. Current sales are small as consumers generally are covered. No activity is expected until November when contracts for next year come up for renewal. The New Jersey Zinc Co. blew in its large furnace at Palmerton today, making two active on spiegeleisen.

Special ferroalloys are unchanged in prices with shipments active on contracts. Tungsten ore is strong at $10.75 a short ton unit, but not much has been done lately.

Alloy Market Quieter

Cleveland, Oct. 5.—Some slackening in automotive buying of hot and cold rolled alloy steels was noted the past week. Changing of models by Hudson Motor Car Co. and Chrysler Corp. as well as by several other makers is reported as slackening their consumption of parts which in turn is reflected in less ordering out of alloy steels by parts makers. Little fourth quarter contracting is being done in this district. Price quotation show no deviation from the levels prevailing during the past weeks.

Melt Increased in July

An increase in the melt in August is reported by members of the Ohio State Foundrymen's association. The normal melt of foundries reporting is 23,791 tons, and there was produced 20,846 tons of castings, or 87.6 per cent. The melt in July was 76.8 per cent, and in August one year ago, 76 per cent. Stock on hand increased to 84 per cent from 79 per cent of the normal melt figure.

Ferroalloy Prices

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resales	$95.00 to 100.00
Ferromanganese delivered Pittsburgh	99.79 to 104.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	32.00 to 34.00
Ferrosilicon, 50 per cent freight allowed	85.00 to 87.50
Ferrotungsten standard, per pound contained	1.00 to 1.05
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	11.00 to 11.50
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	3.25 to 4.00
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent material)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23 to 25 per cent, f.o.b. Anniston, Ala., (24 per cent materials)	122.50

†Duty paid.

Plates

Market Is More Active—Tank Requirements Larger—Railroad Bids Show Market Is Firm

DEMAND for plates is more brisk than in recent weeks. Tank builders at Chicago are inquiring for 20,000 tons, and 10,000 tons was closed. Another lake freighter requiring 4000 tons is up for bids. On 15,000 tons for the Pennsylvania railroad, and a smaller tonnage for the New York Central, bids showed the market firm at 1.90c, Pittsburgh.

PLATE PRICES, PAGE 930

Philadelphia, Oct. 5.—Bids on 15,000 tons of plates for fourth quarter delivery were opened by the Pennsylvania railroad, Sept. 29 and were as follows: Youngstown Sheet & Tube Co., 1.90c, base mill; Theodore Geissman, 2.00c, base St. Louis; Worth Steel Co., 1.90c, base mill; Carnegie Steel Co., 1.90c, base mill; Alan Wood Iron & Steel Co., 1.90c, base mill; Otis Steel Co., 1.90c, base mill with guaranty against decline; Wisconsin Steel Co., 2.10c, base mill; Lukens Steel Co., 1.90c, base mill; Central Iron & Steel Co., 1.90c, base mill with guaranty against decline; Inland Steel Co., 2.10c, base mill; Bethlehem Steel Co., 1.90c, base mill; Illinois Steel Co., 2.10c, base mill.

Boston, Oct. 5.—Plates are more active in New England. The price is firm at 1.90c, Pittsburgh, or 2.365c, delivered. Bridge work in Massachusetts calls for 5000 tons. Several hundred tons are wanted for oil tank construction.

New York, Oct. 5.—The following bids on plates for fourth quarter delivery were recieved by the New York Central railroad: Youngstown Sheet & Tube Co., 1.90c, base Youngstown; Worth Steel Co., 2.00c, base, f.o.b. New York; Otis Steel Co., 1.90c, base Cleveland; Inland Steel Co., 2.10c, Indiana Harbor; Alan Wood Iron & Steel Co., Central Iron & Steel Co. and Lukens Steel Co., 2.185c, base Newberry Junction; Jones & Laughlin Steel Corp., 1.90c, Youngstown; Carnegie Steel Co., 2.01c, Youngstown; Illinois Steel Co., 2.10c, Chicago; Bethlehem Steel Co., 1.90c, West Seneca.

Cleveland, Oct. 5.—Inquiry is current for 4000 tons of plates for a Great Lakes freighter. Between 300 and 400 tons of plates are required for switch engines for which the Nickel Plate railroad is inquiring. Demand from boiler makers is spotty, with a tendency toward easing off. Some large users have not yet contracted for their last quarter material and are operating on their carryover from third quarter. Specifications of one large maker in September were double those of August, due in part to cleaning up contracts. Plates are firm at 1.90c, Pittsburgh, or 2.09c, Cleveland.

Pittsburgh, Oct. 5.—Plate mills keep up a high average operating rate, and a large aggregate tonnage is contributed each week by different lines of activity, including tank makers, boiler manufacturers, and others. Additional tanks for the Panhandle field in Texas involving 3000 tons have been ordered from a local fabricator. A diesel engine, stern wheel towboat for the Mississippi river commission will be bid for until Nov. 5.

Chicago, Oct. 5.—No cessation is appearing in oil tank business, inquiries for tank plates from builders totaling 20,000 tons. Upwards of 10,000 tons of plates were sold the past week, the larger portion going to tank fabricators. Specifications have been the heaviest in several months. The larger farbricators are comfortably booked ahead. Orders in sight from car builders for at least 15,000 cars for western roads point to increasing future tonnages of plates.

CONTRACTS PLACED

3000 tons, ten 80,000-barrel tanks for the Panhandle, Tex. oil field, to the Riter-Conley Co.

1200 tons, four oil barges 300 tons each for Gulf Refining Co., two to Sun Shipbuilding Co. and two to American Brown-Boveri Electric Corp.

800 tons, four large single-deck barges for the Reading Co., to the American-Brown-Boveri Corp. Contract received by the American company for two steel decked barges also.

800 tons, two ferry boats, Southern Pacific, San Francisco, to Moore Drydock Co.

400 tons, one ferry boat, Southern Pacific Co., San Francisco, to Bethlehem Shipbuilding Corp.

400 tons, one ferry boat, Southern Pacific Co., San Francisco, to General Engineering Drydock Co.

350 tons, gas holder for General Engineering & Management Co., Wildwood, N. J., to Stacey Mfg. Co.

100 tons, stock for Ornamental Iron Works, Akron, O., to unstated mill.

CONTRACTS PENDING

6500 tons, syphons, Huntington-Schaver Lake project, Southern California Edison Co.; bids in Oct. 4.

4000 tons, freighter for Great Lakes trade; pending.

1250 tons, syphons, Mone Bear project, Southern California Edison Co.; bids in Oct. 4.

1000 tons, seagoing dredge for Dalkowitz Bros., New York; pending.

400 tons, diesel engine stern wheel boat, 220-horsepower, for the Mississippi river commission, Memphis, Tenn.; bids close Nov. 5.

300 to 400 tons, plates for switch engines for Nickel Plate railroad; bids being taken.

Semifinished

Specifications Good, New Sales Moderate—Prices Show Firmness

SALES of semifinished steel are moderate, some consumers having covered for fourth quarter, while others continue to buy month-to-month. Several lots of slabs and standard billets were booked during the week at $35, Pittsburgh. The market for sheet bars also is firm at $35. Mills generally report good specifications.

SEMIFINISHED STEEL PRICES, PAGE 930

Pittsburgh, Oct. 5.—Some attractive orders have been taken for slabs for October shipment, involving 1000 to 1500 tons at a time. The $35 price has applied in each case. Some orders for 4 x 4-inch rerolling billets have been taken at the same figure, although the tonnages have been much smaller. The majority of purchasers apparently intend to go ahead on a month-to-month basis. The Dilworth-Porter Co. recently issued an inquiry for a fairly large tonnage of small billets, and is understood to have closed. Some makers are asking a differential of at least $1 over the price of 4 x 4-inch billets for the smaller sizes. Some attractive fourth quarter forging billet contracts have been placed and specifications are being received against these, with $40 the price in each case. The Bethlehem Steel Corp. has no small billets to offer at present since it requires all it makes for its own use. Wire rod orders continue to command $45. Skelp is unchanged and inactive at 1.90c. Inquiries are lacking.

Cleveland, Oct. 5.—Specifications on contracts for sheet bars, billets and slabs continue in good volume, and are maintaining operations by the leading merchant mill interest here practically at capacity. Requirements for fourth quarter have been fairly well covered. Considerable buying remains to be done. A few additional sales of sheet bars are noted at the prevailing prices, namely $36, Cleveland or Youngstown. Slabs and standard billets are in fair demand at $35.

Chicago, Oct. 5.—Billet demand is active, sales the past week totaling upwards of 500 tons. Little demand is noted for sheet bars. The quotation of $35, Chicago, is firm for billets, and sheet bars are steady at $36.

In 1860 only iron was used in the production of bars, rods, plates, sheets and rails and the puddling furnace was an indespensible agency in their manufacture.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross Tons Delivered to Consumer

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	13.00 to 13.50
Boston (dealers)	11.00 to 11.50
Buffalo, No. 1	17.50 to 18.00
Buffalo, No. 2	15.75 to 16.25
Chicago	13.25 to 13.75
Cincinnati (dealers)	13.50 to 14.00
Cleveland, No. 1	15.50 to 15.75
Cleveland, No. 2	14.50 to 14.75
Detroit	12.75 to 13.25
Eastern Pennsylvania	16.50 to 17.00
Bethlehem delivery	15.50 to 16.00
New York (dealers) (yard)	10.50 to 11.00
Pittsburgh	17.00 to 17.50
St. Louis	13.25 to 13.75
Valleys, No. 1.	18.00

COMPRESSED SHEETS

Buffalo	14.75 to 15.25
Chicago	11.50 to 12.00
Cleveland	14.00 to 14.50
Detroit	11.00 to 11.50
Pittsburgh	16.00 to 16.50
Valleys	17.50

BUNDLED SHEETS

Buffalo	11.00 to 11.50
Cincinnati (dealers)	9.50 to 10.00
Cleveland	12.50 to 13.00
Eastern Pennsylvania	13.00 to 13.50
Pittsburgh	15.00 to 15.50
St. Louis	9.00 to 9.50

SHEET CLIPPINGS, LOOSE

Chicago	8.25 to 8.75
Cincinnati	7.00 to 7.50
Detroit	6.75 to 7.25
St. Louis	9.00 to 9.50

STEEL RAILS, SHORT

Birmingham	13.00 to 14.00
Buffalo	17.25 to 17.75
Chicago	16.75 to 17.00
Cincinnati (dealers)	18.00 to 18.50
Cleveland (over 6 ft.)	15.50 to 16.00
Detroit	15.50 to 16.00
St. Louis	17.00 to 17.50

STOVE PLATE

Birmingham	14.00 to 14.50
Boston (consumers)	13.50 to 14.00
Buffalo	15.50 to 15.75
Chicago (net)	14.25 to 14.50
Cincinnati (dealers) (net)	9.50 to 10.00
Cleveland	13.00 to 13.50
Detroit (net tons)	12.50 to 13.00
Eastern Pennsylvania	13.50 to 14.00
New York (dealers)	10.00 to 11.25
Pittsburgh	13.50 to 14.00
St. Louis	15.00 to 15.25

LOW PHOSPHORUS

Buffalo, billet and bloom crops	18.50 to 19.00
Cincinnati (dealers)	16.50 to 17.00
Eastern Pennsylvania	21.00 to 22.00
Pitts. billet and bloom crops	21.00 to 21.50
Cleveland, billet and bloom crops	19.00 to 19.50

SHOVELING STEEL

Chicago	13.25 to 13.75
Pittsburgh	12.50 to 13.00
St. Louis	13.25 to 13.75

KNUCKLES, COUPLERS, SPRINGS

Chicago	16.50 to 16.75
Eastern Pennsylvania	18.50 to 19.00
Pittsburgh	18.50 to 19.00
St. Louis	15.00 to 15.50

FROGS, SWITCHES, GUARDS

Chicago	15.50 to 16.00
Eastern Pennsylvania	12.00 to 12.50
St. Louis	15.25 to 15.75

ANGLE BARS—STEEL

Buffalo	16.50 to 17.00
Chicago	15.50 to 16.00
St. Louis	15.00 to 15.50

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	$12.00 to 13.00
Boston (dealers)	11.50 to 12.00
Buffalo, No. 1	13.50 to 14.00
Buffalo, No. 2	15.50 to 16.00
Chicago, No. 1	14.75 to 15.25
Chicago, No. 2	13.25 to 13.50
Cincinnati, No. 1 (dealers)	11.50 to 12.00
Cleveland, No. 1	12.50 to 13.00
Eastern Pennsylvania	17.00 to 17.50
New York, No. 1 (dealers)	14.50 to 15.00
Pittsburgh, No. 1	13.50 to 14.00
Pittsburgh, No. 2	17.00 to 17.50
St. Louis, No. 1	13.50 to 14.00
St. Louis, No. 2	13.25 to 13.75

WROUGHT PIPE

Boston (dealers)	10.00 to 10.50
Eastern Pennsylvania	14.50 to 15.00
Buffalo	15.00 to 15.50
New York (dealers)	10.25 to 10.75

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	16.50 to 17.00

BUSHELING

Buffalo	16.00 to 16.50
Chicago, No. 1	12.00 to 12.50
Chicago, No. 2	9.00 to 9.50
Cincinnati, No. 1 (dealers)	8.00 to 8.50
Cleveland No. 1	11.75 to 12.00
Cleveland, No. 2	11.50 to 11.75
Pittsburgh, No. 1	14.50 to 15.00
St. Louis, No. 1	12.00 to 12.25

MACHINE SHOP TURNINGS

Birmingham	8.00 to 8.50
Boston	8.50 to 9.00
Buffalo	10.75 to 11.25
Chicago	7.75 to 8.00
Cincinnati (dealers)	6.50 to 7.00
Cleveland	11.00 to 11.50
Detroit	8.75 to 9.25
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.00 to 9.50
Pittsburgh	12.00 to 12.50
St. Louis	8.00 to 8.50

CAST IRON BORINGS

Birmingham (chemical)	15.50 to 16.50
Birmingham (plain)	8.00 to 8.50
Boston (chemical)	10.50 to 11.00
Boston (dealers)	8.50 to 9.00
Buffalo	12.00 to 12.50
Chicago	10.00 to 10.50
Cincinnati (dealers)	7.00 to 7.50
Cleveland	11.75 to 12.00
Detroit	9.50 to 10.00
Eastern Pennsylvania	13.50 to 14.00
Eastern Pennslyvania (chem.)	16.00 to 17.00
New York (dealers)	9.00 to 9.50
Pittsburgh	13.00 to 13.50
St. Louis	10.50 to 11.00
Valleys	13.50

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	8.00 to 8.50
Buffalo	12.00 to 12.50
Cincinnati (dealers)	6.50 to 7.00
Cleveland	11.75 to 12.00
Detroit	9.00 to 9.50
Eastern Pennsylvania	12.00 to 13.00
New York (dealers)	9.00 to 9.50
Pittsburgh	12.50 to 13.00

PIPES AND FLUES

Chicago (net)	9.75 to 10.25
Cincinnati (dealers)	8.50 to 9.00
St. Louis	11.00 to 11.50

RAILROAD GRATE BARS

Buffalo	13.00 to 13.50
Chicago (net)	13.50 to 14.00
Cleveland	13.50 to 13.75
Eastern Pennsylvania	13.50 to 14.00
New York (dealers)	11.25 to 12.00
St. Louis	15.00 to 15.50

FORGE FLASHINGS

Boston (dealers)	9.50 to 10.00
Buffalo	14.00 to 14.50
Chicago	9.25 to 9.75
Cleveland (over 10 in.)	12.50 to 13.00
Cleveland (under 10 in.)	12.50 to 13.00
Detroit	8.75 to 9.25
Pittsburgh	13.00 to 13.50

FORGE SCRAP

Boston (dealers)	9.00 to 9.50
Chicago	17.50 to 18.00
Eastern Pennsylvania	14.00 to 14.50

ARCH BARS AND TRANSOMS

Chicago (net)	19.50 to 19.75
St. Louis	20.50 to 21.00

Iron Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	9.50 to 10.00
Buffalo	13.50 to 14.00
Chicago	13.50 to 14.00
Cleveland	12.50 to 13.00
Eastern Pennsylvania	14.00 to 14.50
Pittsburgh	15.75 to 16.25
St. Louis	11.00 to 11.50

STEEL CAR AXLES

Birmingham	17.00 to 18.00
Boston (shipping point)	18.00 to 18.50
Buffalo	16.50 to 17.00
Chicago	20.25 to 20.75
Cleveland	16.00 to 16.50
Eastern Pennsylvania	23.00 to 24.00
Pittsburgh	22.00 to 22.50
St. Louis	20.50 to 21.00

SHAFTING

Boston (shipping point)	16.00 to 17.00
Chicago	20.00 to 20.25
Eastern Pennsylvania	22.00 to 23.00
New York (dealers)	17.50 to 18.00
St. Louis	18.00 to 18.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	$16.00 to 16.50
Boston (consumers)	17.00 to 17.50
Buffalo, iron	16.50 to 17.00
Buffalo, steel	17.00 to 17.50
Chicago, iron	14.50 to 15.00
Chicago, steel	16.50 to 17.00
Cincinnati	12.50 to 13.00
Eastern Pennsylvania	17.50 to 18.00
New York iron (dealers)	12.50 to 13.50
Pittsburgh, iron	16.00 to 16.50
Pittsburgh, steel	18.50 to 19.00
St. Louis, iron	15.25 to 15.75
St. Louis, steel	17.50 to 18.00

NO. 1 CAST SCRAP

Birmingham, cupola	16.50 to 17.00
Boston	18.00 to 18.50
Buffalo	16.00 to 16.50
Chicago, No. 1 machinery	18.50 to 19.00
Chicago, No. 1 railroad or agricultural	18.25 to 18.75
Cincinnati No. 1 machinery cupola (net tons dealers)	18.00 to 18.50
Cleveland, cupola	16.75 to 17.25
Detroit (net tons)	15.00 to 15.50
Eastern Pennsylvania, cupola	17.50 to 18.00
New York, cupola (dealers)	14.50 to 15.00
Pittsburgh, cupola	16.50 to 17.00
San Francisco, delivered	20.00 to 21.00
Seattle	17.00
St. Louis, railroad	16.50 to 17.00
St. Louis, agricultural	16.50 to 17.00
St. Louis, machinery	19.00 to 19.50
Valleys	17.50

HEAVY CAST

Boston	15.50 to 16.50
Buffalo (breakable)	13.25 to 13.75
Cleveland	13.00 to 13.25
Detroit (automobile) (net tons)	20.00 to 20.50
Eastern Pennsylvania	16.00 to 17.00
New York (dealers)	12.75 to 14.00
Pittsburgh	15.50 to 16.00

MALLEABLE

Boston, railroad	19.50 to 20.50
Buffalo	17.50 to 18.00
Chicago, agricultural	15.25 to 15.75
Chicago, railroad	16.50 to 17.00
Cincinnati, railroad (dealers)	15.00 to 16.00
Cincinnati, agricultural (dealers)	14.50 to 15.00
Cleveland, agricultural	17.50 to 18.00
Cleveland, railroad	18.50 to 19.00
Detroit	14.50 to 15.00
Eastern Pennsylvania, railroad	16.00 to 17.00
Pittsburgh, railroad	18.50 to 19.00
St. Louis, agricultural	14.50 to 15.00
St. Louis, railroad	14.50 to 15.00

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	15.50 to 16.50
Boston (dealers)	11.50 to 12.00
Buffalo	17.25 to 17.75
Chicago	17.00 to 17.50
Cleveland	16.00 to 16.25
Eastern Pennsylvania	17.00 to 17.50
New York	13.75 to 14.25
Pittsburgh district	18.50 to 19.50
St. Louis	14.50 to 15.00

LOCOMOTIVE TIRES

Chicago, No. 1	18.25 to 18.50
Chicago, cut	18.00 to 18.50
St. Louis, No. 1.	16.00 to 16.50

LOW PHOSPHORUS PUNCHINGS

Chicago	16.50 to 17.00
Eastern Pennsylvania	19.00 to 20.00
Pittsburgh	18.50 to 19.00

Scrap

Dullness and Lower Prices Rule in All Centers—Buyers Rule Situation

LACK of interest on the part of consumers and heavy supplies have proved too much for the iron and steel scrap market and it is slipping, lower quotations being met in most grades. Dealers find it increasingly difficult to make shipments on contracts. Yards appear to have a heavy supply and this is a bearish factor in the situation.

Chicago, Oct. 5.—With buying by consumers negligible, the iron and steel scrap market is showing further tendency to weaken, and dealers' prices for most grades are 25 to 50 cents under those of a week ago. Heavy melting steel is quoted at $13.25 to $13.75, two of the larger consumers having bought at the latter figure. Cast borings at $10 to $10.50 are the lowest in three years. It is reported that an important consumer declined to buy the latter at $9.50. A number of dealers are finding it increasingly difficult to place orders, and a bearish factor is the heavy accumulation of scrap, particularly in smaller yards.

Boston, Oct. 5.—Heavy railroad lists give some life to an otherwise dull iron and steel scrap market. The Boston & Maine railroad offers 1000 tons of miscellaneous iron and steel scrap. The Boston & Albany list includes 1500 tons and the Boston Elevated offers an unstated tonnage estimated at about 1900 tons. Heavy melting steel has dropped another 50 cents to $11.50 shipping point. A Bridgeport, Conn., melter took 400 tons of heavy cast at $16.50 delivered.

New York, Oct. 5.—With consumers buying negligible lots and with several mills holding up shipments, trading in the local scrap market is at a virtual standstill. However, some relief is indicated by the action of the Lukens Steel Co. this week in accepting some material on order. Prices continue easy, with a sharp reduction in wrought pipe, which is now holding at $10.25 to $10.75, New York, and which has been moving particularly sluggishly, and with a slight decline in No. 1 railroad steel to a range of $12.50 to $12.85, New York. The Bethlehem Steel Corp. is the only consumer now taking the latter material in quantities and of late has been considerably more rigid in its specifications. For the first time in some while, Bethlehem is out of the market on borings and turnings.

Philadelphia, Oct. 5.—Bethlehem Steel Co. bought large tonnages of scrap the past week at $16, delivered Bethlehem, and $16.50 delivered Steelton, for No. 1 melting steel. It may also have bought for Sparrows Point. Otherwise steel mills generally are out of the market and continue embragoes on shipments. Foundries are fair buyers of cast scrap.

Buffalo, Oct. 5.—Soft spots seem to be developing in the iron and steel scrap market. Consumers are not offering more than $16 for No. 2 heavy melting steel. Unfilled orders are steadying the price of No. 1 although there is no new buying.

Pittsburgh, Oct. 5.—In spite of sustained steel mill operations, the scrap market shows a weakness. A West Virginia user has been able to buy heavy melting steel scrap at $17, compressed sheets at $16, and bundled sheets at $15. It is understood to have closed on at least 20,000 tons at these figures. A local buyer of heavy melting steel previously paid $17.50, but some small lots were offered here today at $17, without takers. Steel specialties now are easier at $19, and several other grades of scrap have declined 50 cents per ton.

Detroit, Oct. 5.—Little change is noted in the iron and steel scrap market. Demand continues limited and the small number of inquiries being received evidence the lack of interest on the part of consumers.

Cincinnati, Oct. 4.—Dullness pervades the iron and steel scrap market in this district, because consumers refuse to interest themselves in offerings. Despite the slackened demand, dealers are laying in supplies and as a result all tonnages offered by the railroads and other producers are being readily absorbed.

St. Louis, Oct. 5.—Heavy offering and small purchases have caused a weak market in iron and steel scrap and prices are lower this week. Railroad lists offering 50,000 tons last week and 50,000 the previous week have been tremendous, much more than this market can absorb.

Birmingham, Ala., Oct. 4.—Buying of old material is more active but quotations are unchanged. Heavy melting steel has been purchased by the larger melters in quantities.

Sheets

Market Is Active, and Demand Broadening—New Price Levels Are More General

DEMAND for practically all grades of sheets is broadening, and deliveries are becoming more deferred. A slight slowing up in requirements for automobile body stock is noted, but is more than made up by orders from other consuming lines. The market is firm, makers generally quoting the new level of prices.

SHEET PRICES, PAGE 930

Pittsburgh, Oct. 5.—Recent features of the sheet market have included the continued high demand from agricultural implement makers for galvanized and blue annealed sheets. This demand has spread to car builders, for repairs and new cars. The electrical industry and building construction lines have been active buyers, and a fair number of orders have been placed at the recently advanced levels, 2.40c on blue annealed, 3.10c on black, and 3.95c on galvanized. These levels now are being maintained by the industry in general. Tin mill black sheets were advanced $2 at the same time the other advances were made. Specifications against contracts at the old levels prevailing before the increase are liberal. The American Sheet & Tin Plate Co. continues to operate at above 90 per cent, attaining 91 per cent last week, and having a similarly high schedule for the present week. Independents are operating between 85 and 90 per cent. A falling off is noticed in automotive sheet buying.

Boston, Oct. 5.—Better inquiry is reported for sheets and recent sales include some of the largest tonnages placed in many weeks. Galvanized sheets are firm at 3.85c, Pittsburgh.

Buffalo, Oct. 5.—Sheet business is being booked in sustained volume with the fourth quarter outlook good. Mill operation is at least 80 per cent of capacity, with prospect of continuance. Competition is less keen than usual, as some small makers are nearly sold up.

The Lysaght Dominion Sheet Metal Corp., Hamilton, Ont., has adopted the No. 24 gage base on galvanized sheets, in line with the new American practice, and has issued a new card of differentials and extras.

St. Louis, Oct. 5.—Demand for sheets continues heavy. Mills report purchasers are pressing them for early deliveries, and they are far behind in filling orders because of the rush which found them without stocks. Jobbers in agricultural districts are eager to get deliveries of galvanized sheets. The market is firm.

Cleveland, Oct. 5.—Numerous small lot purchases of sheets are maintaining backlogs of mills, despite unusually heavy production schedules. Buying is general, although some

slackening in automotive purchases is reported, one large body builder in this district having diminished its working forces during the past week. Prices are firm on the levels established recently. Black sheets are steady at 3.10c and galvanized at 3.95c for 24 gage, and blue annealed at 2.40c, Pittsburgh, on 10 gage. Most buyers are covered for fourth quarter at 3.00c, 3.85c and 2.30c, however, and the higher prices will not apply on tonnage rolled for several months.

Youngstown, O., Oct. 5.—Broadening of the sheet market is the newest feature in the trade in this district. While some slight slackening is noticeable in demand for full-finished grades for the automobile industry, this is more than made up by increased requirements from other sources. Makers here are getting inquiries from concerns with which they never did business, indicating the latter are interested in getting additional material from other than regular sources. Mills here are operating on the same basis as last week, or at about 93 per cent of capacity. Some makers now are booked far into November, others well into October and still others ten days to two weeks ahead. Most of this business is on firm specifications, some taking on some contracts although the latter are few. While 3.10c continues to be the usual minimum on black No. 24 gage, yet 3.00c minimum has not disappeared entirely. Galvanized No. 24 gage ranges from 3.85c to 3.95c, and blue annealed No. 10 gage from 2.30c to 2.40c, while full-finished sheets are 4.25c for No. 20 gage.

Chicago, Oct. 5.—Deliveries of black, blue annealed and galvanized sheets are more deferred and the leading independent maker is finding it more difficult to accomodate buyers. This producer is not promising deliveries under five to six weeks. Demand is spread throughout manufacturing lines in the heavy spot buying movement, which has been in progress for two months. Fourth quarter contracting is active. Warehouses have been pressing for deliveries from mills, and are reporting good business. Buyers who have deferred placing business are finding it difficult to get material. All producers have met the $2 a ton advance of the Inland Steel Co., and quotations at Indiana Harbor and Gary mills now are 3.20c for black, 2.50c for blue annealed and 4.05c for galvanized.

Tin Plate

Mills Have Good Backlogs—Export Prices Higher

TIN PLATE PRICES, PAGE 930

Pittsburgh, Oct. 5.—The fourth quarter is entered by tin plate makers with good backlogs to be shipped this year. Before Jan. 1 specifications will be received for stock for standard sized cans, the plate to be rolled this year and shipped after Jan. 1. For this reason the present high rate of operation undoubtedly will continue through most, if not all of the fourth quarter. A few orders continue to develop from abroad, usually for quick delivery. The American Sheet & Tin Plate Co. is operating at 92 per cent, with independents around 90 per cent, and the general average is 90 per cent or better. The market price is unchanged at $5.50. Higher prices are being obtained in the export market, 18c or 20c per box more than was possible two months ago.

Labor Federation Loses in Membership

Detroit, Oct. 5.—The paid up membership of the American Federation of Labor declined 64,000 during the past year, according to the report of the secretary, Frank Morrison, read at the opening of the federation's convention here Monday. The total is 2,877,910, compared with 2,813,910 a year ago. The decrease was accounted for by the suspension of the railway mail clerk's union and the loss in membership of the railway unions.

Morrison reported that there are nearly 500,000 other members who have not paid their dues, because of strikes or unemployment. He said this gives the federation a total membership of 3,313,910.

William Green, federation president, said the organization is committed to the five-day week, and pointed to Henry Ford's adoption of the schedule as proof of its practicability.

In 1895 open-hearth steel production in Great Britain surpassed bessemer converter output.

Pipe

No Change Noted in Pipe Mill Operations—Cast Buying Includes Several Large Tonnages

CONTINUED practical capacity operations mark pipe mill activities. Although no large line pipe business is being placed, jobber orders and prompt oil country needs require considerable tonnage. Cast pipe activity of the week is featured by award of 6000 tons by Syracuse, N. Y. Wyandotte, Mich. has awarded the general contract on 4200 tons.

PIPE PRICES, PAGE 930 AND 976

Pittsburgh, Oct. 5.—Little slackening is noticed in the buying rate on pipe. Pipe mills all are operating either full or as nearly full as possible—usually one furnace out of a group being out for repairs. Lapweld deliveries still are 8 to 11 weeks deferred on some sizes. Buttweld pipe is easier, some sizes being delivered out of stock as soon as orders are received. The Chansler-Canfield-Midway Oil Co. at Olinda, Calif., recently ordered some 2-inch seamless drill pipe from the National Tube Co., which interest since has received numerous similar orders. Typical orders for oil country goods involved 200 or 300 tons at a time. A few larger projects are pending but with deliveries so much deferred, oil interests find it difficult to reach decision concerning the installation of long lines. Prices are firm.

New York, Oct. 5.—Featuring the eastern cast pipe market is the placing of 6000 tons by Syracuse, N. Y. Delay still attends the placing of 11,000 tons of cast pipe, fittings and special castings for this city, and on which German makers were low bidders. Prices are unchanged.

Chicago, Oct. 5.—By the latter part of the month municipal cast iron pipe bids will have been closed fairly generally in this territory. Public utility and advanced seasonal municipal business will not develop until late in December. Awards are growing lighter, and the bulk of the business is in two to three-carload lots. The largest pending job is for 4200 tons of 6 to 30-inch class B and C pipe for Wyandotte, Mich., for which Coleman & Harding have been awarded the general contract.

Birmingham, Ala., Oct. 4.—Some recession in the cast iron pipe trade is reported but is is a fact that the pressure pipemakers have been purchasing considerable tonnage of pig iron. Delays in delivery of pipe, especially centrifugal cast still are prevalent. A good tonnage will be needed for Florida for repairs to buildings damaged by recent storms. Quotations are still $39 $40 for 6-inch and over pipe.

CONTRACTS PLACED

6000 tons, Syracuse, N. Y., to the United States Cast Iron Pipe & Foundry Co.
2500 tons, 6 to 12-inch cast pipe, West Hempstead, Long Island, N. Y., to Central Foundry Co.
600 tons, 6, 8 and 12-inch pipe, for Cuyahoga Falls, O., to Lynchburg Foundry Co.
500 tons, 6, 8 and 10-inch pipe for Point Pleasant, N. J., to the United States Cast Iron Pipe & Foundry Co.
287 tons, 12-inch class B pipe, Santa Cruz, Calif., to Grinnell Co. for Belgian pipe.
260 tons, 8-inch, and 175 tons of 6-inch pipe for Royal Oak, Mich., to Lynchburg Foundry Co.
220 tons, 30-inch pipe, New York, to John Fox & Co.
150 tons, 6 and 12-inch pipe, Oak Park, Ill., to Glamorgan Pipe & Foundry Co.

CONTRACTS PENDING

4200 tons, 6 to 30-inch class B and C pipe, for Wyandotte, Mich.; general contract awarded to Coleman & Harding.
2217 tons, 6 to 12-inch class C pipe, Kokohead Park, T. H.; bids opened.
1028 tons, 8, 12 and 16-inch pipe, for Chicago;

bids open Oct. 1 and Oct. 7.
1025 tons, 6, 8 and 16-inch pipe, for Milwaukee; bids in.
421 tons, 6 to 12-inch class C pipe, Yakima, Wash.; bids in Oct. 4.
100 tons, 4 and 6-inch class B pipe, Antioch, Calif.; C. W. Cushing awarded general contract, pipe not yet placed.

Iron Ore

Shipments Set New September Record 60,000,000 Tons Indicated

Cleveland, Oct. 5.—A new record for lake shipments of iron ore for the month of September was established, as forecast last week, with a total of 9,621,756 tons. This exceeded the prior record made in September, 1916, by approximately 20,000 tons. It exceeded the September 1925 shipment by 2,266,883 tons.

The total lake shipment this season to Oct. 1 was 45,230,908 tons, 2,418,882 tons more than in the same period last year. If shipments over the remainder of this year are on a par with those in October and November last year, the total will be close to 58,000,000 tons. A further gain in lake shipments, and in rail shipments, is expected to bring the total for this year to approximately 60,000,000 tons.

Coal cargoes have not been "passed up" by vessels to expedite the movement of iron ore, according to leading shippers. The movement of coal was heavy at the beginning of the season, and then tapered off. Many carriers that went up the lakes light did so because there was no coal to carry, supplies at upper lake ports being ample.

A few lots of manganiferous iron ore figured in the week's sales. Demand generally has been satisfied and producers do not expect much more business to develop over the remainder of the year.

New York, Oct. 5.—Six or seven cargoes of Swedish iron and five cargoes of North African ore were sold recently at the eastern seaboard. Prices range from 9 to 10.25 cents per unit, c.i.f. seaboard. The trend is strong because of heavy buying by Germany in the last two weeks.

Will Install Gas Plant

Consumers Power Co., Flint, Mich. has started work on the construction of a new coal-gas plant, costing in excess of $1,000,000. The new plant will have a daily capacity of 4,000,000 cubic feet of gas. Contract for the construction work on 29 late-type ovens or retorts has been let to the Koppers Co., Pittsburgh.

Resume Hearing Nov. 8

Pittsburgh, Oct. 5.—Testimony in the federal trade commission's proceeding against the Aluminum Co. of America, on the grounds of alleged monopolistic practice, will next be taken Nov. 8. Delay has ensued because important witnesses for the company are engaged in development work in Canada.

Bars

Heavy Buying Continues and Prices Are Firm—Railroad Buying Still Lacks

BUYING and specifying in soft steel bars continues at a high rate, Chicago mills find September much ahead of August and of September last year. Bids on Pennsylvania and New York Central inquiries for bars developed nothing under the prevailing rate of 2.00c, Pittsburgh, and 2.10c, Chicago. Lower prices seem to have been worked out by mills.

BAR PRICES, PAGE 930

Chicago, Oct. 5.—Another period of heavy buying of soft steel bars and other finished steel was rounded out in September, when the tonnage of new business reached 20 to 25 per cent ahead of August. Sales and orders both were substantially ahead of September, last year. It is understood last month's rail business represented only a small portion of the increased steel bookings. The vigorous general demand is marred only by the prospects in car building and the farm implement industry. Car building operations, while more favorable than a month ago, still hold much that is uncertain. Recent floods in middle western states have checked specifications temporarily of some implement makers. Soft steel bars are firm at 2.10c, Chicago mills. It is reported fewer buyers are benefitting by differentials.

Rail steel demand continues heavy, a leading independent finding it difficult to make prompt deliveries. Fair demand is shown for bar iron

Boston, Oct. 5.—Practically all bar consumers in this district are now covered for fourth quarter requirements. Sales of the past week in Boston total about 2000 tons. Warehouses are heavy buyers. The price is firm at 2.00c Pittsburgh.

Philadelphia, Oct. 5.—Bids were opened by the Pennsylvania railroad on 5500 tons of steel bars, Sept. 29, for fourth quarter shipment as follows: Youngstown Sheet & Tube Co., 2.00c base mill; Central Alloy Steel Corp., 2.00c base, mill; Donner Steel Co., 2.00c base mill with guaranty against decline; Carnegie Steel Co., 2.00c base mill; Bourne-Fuller Co., 2.00c base mill; Wisconsin Steel Co., 2.10c, base mill; Pittsburgh Crucible Steel Co., 2.00c base mill with guaranty against decline; Penn Seaboard Steel Corp., 2.10c, base mill with guaranty against decline; Inland Steel Co., 2.10c, base mill; Bethlehem Steel Co., 2.00c base mill; Republic Iron & Steel Co., 2.00c base mill; Illinois Steel Co., 2.10c, base mill.

New York, Oct. 5.—Bids received by the New York Central railroad on steel bars for fourth quarter are as follows: Jones & Laughlin Steel Corp. 2.00c base, Youngstown; Youngstown Sheet & Tube Co. 2.00c base Youngstown; Bethlehem Steel Co. 2.00c base West Seneca; Republic Iron & Steel Co. 2.00c base Youngstown; Donner Steel Co. 2.00c base Buffalo; Inland Steel Co. 2.10c base, Indiana Harbor; Bourne-Fuller Co. 2.00c base, Cleveland; Carnegie Steel Co. 2.11c base, Youngstown; Illinois Steel Co. 2.10c base, Chicago.

Philadelphia, Oct. 5.—The steel bar market is firmer at 2.00c Pittsburgh. Apparently there is not much shading, mills generally are scheduled three to four weeks ahead.

Buffalo, Oct. 5.—The bar range is from 2.265c to 2.365c in this territory with delivery becoming a factor of considerable importance. Mill operation is holding around 85 per cent.

Pittsburgh, Oct. 5.—Merchant steel bar specifying has started out well, even though tonnages were heavy in September closing old contracts. A number of producers claim they have nothing for shipment during fourth quarter at less than 2.00c. Users are not anticipating requirements far into the future and specifications are held down. Cold bar finishers continue active, as do spring makers and other automobile parts manufacturers. Electrical companies and structural fabricators also are buying liberally.

Refined iron bar demand shows no change but is held up well in the aggregate. Small orders rule. Prices are firm starting at 3.00c.

Cleveland, Oct. 5.—Makers of soft steel bars have no large inquiries before them and in some instances large users have not covered for the last quarter, yet the day-to-day run of business is good and nothing has developed to warrant any change from the gait of the last 90 days. Practically all third quarter contracts were specified out. Automotive manufacturers are operating at close to capacity, with no radical change in prospect this month. Bars are quoted at 2.00c, Pittsburgh, or 2.19c, Cleveland.

Hoops and Bands

Specifications Continue Satisfactory and Prices Are Steady

HOOP PRICES, PAGE 930

Pittsburgh, Oct. 5.—Parts makers and other users of hoop and band sizes of hot-rolled flats continue to specify and are ordering fair-sized lots each week. The cooperage industry also takes a fair aggregate tonnage. The price is firm at 2.50c, and operations average about 85 per cent.

Structural Shapes

Large Tonnage Inquiries Appear Less Frequently But Buying Holds Steady—Railroads Take Bids on Fourth Quarter Needs

STRUCTURAL steel inquiries are decreasing in total tonnage, but not in number. Large projects are fewer than in preceding weeks. Offsetting a decline in New York inquiries noted recently, a project involving three garment trades units taking 30,000 tons has been brought out. Building will be spread over three years. New York Central and Pennsylvania railroads have opened bids on fourth quarter structural requirements, and the firmness of the present price situation again is demonstrated, 2.00c and 2.10c base mill prices being uniform. Fabricated quotations still vary widely.

Awards of the week include 2500 tons for Mayo clinic buildings at Rochester, Minn., and 1800 tons for a cement plant in Florida.

STRUCTURAL SHAPE PRICES, PAGE 930

New York, Oct. 5.—While structural orders again are fewer than the week before, inquiries have been decidedly more numerous, with prospects of a good buying movement getting under way before the close of this month. Few large tonnages appear. Prices are unchanged on both fabricated material and shapes, those for the latter holding around 2.00c, Pittsburgh.

Bids on shapes for fourth quarter for the New York Central railroad brought out the following prices: Youngstown Sheet & Tube Co. and Jones & Laughlin Steel Corp. 2.00c, base, Youngstown; Bethlehem Steel Co. 2.00c, base West Seneca; Republic Iron & Steel Co. 2.00c, base Youngstown; Inland Steel Co., 2.10c, base Indiana Harbor; Carnegie Steel Co., 2.11c, base Youngstown; Illinois Steel Co. 2.10c, base Chicago.

Boston, Oct. 5.—While large projects are missing in the prospective work, structural fabricators are busy and prices are firm. The weak spots for plain material have disappeared and with few exceptions 2.00c, Pittsburgh, is the prevailing price. One or two sales at 1.95c, Pittsburgh, were made early in the week.

Philadelphia, Oct. 5.—Bids were opened by the Pennsylvania railroad, Sept. 29, on 700 tons of shapes for last quarter delivery as follows: Carnegie Steel Co., 2.00c base mill; Wisconsin Steel Co., 2.10c, base mill; Phoenix Iron Co., 2.00c, base mill; Inland Steel Co., 2.10c, base mill; Eastern Steel Co., 2.10c, base mill; Bethlehem Steel Co., 2.00c, base mill.

Eastern structural shape mills continue scheduled about four weeks ahead. Orders are fair but are not replacing shipments. The usual price is 2.00c Pittsburgh but the full prevailing range is 1.85c to 2.00c.

Pittsburgh, Oct. 5.—Some local fabricators report a falling off in awards and inquiries, while others report sustained buying and an influx of new business. The latter for the most part involves small tonnages. The mill price on plain material is firm at 2.00c.

Cleveland, Oct. 5.—One of the leading independent fabricators in this district reports it has not figured an inquiry in several weeks calling for more than 500 tons. Large work is lacking both in inquiries and awards, although several good sized projects are being figured quietly. Plain material contracting for fourth quarter needs nearly all has been completed. Specifying during the past week picked up slightly. Plain material is firm at 2.19c Cleveland or 2.00c Pittsburgh.

Chicago, Oct. 5.—Large purchases of shapes and plates for oil tankage are being made. With the recent closing of awards for a number of heavy-tonnage structures in Chicago and middle western states, building activity is subsiding. With prospects that car building at least will approximate last year's program, demand for shapes from that source is expected to liven when car builders start to assemble material. From 12,000 to 15,000 tons of structural shapes for building in the Middle West have been awarded the past week. The price for plain material is firm at 2.10c, Chicago.

Awards Compared

	Tons
Awards this week	18,613
Awards last week	35,230
Awards two weeks ago	26,348
Awards this week in 1925	55,920
Average weekly awards, Sept.	35,097
Average weekly awards, 1926	28,839
Total awards to date, 1926	1,319,898
Total awards to date, 1926	1,143,368

CONTRACTS PLACED

2500 tons, Mayo clinic building, Rochester, Minn., through G. Schwartz & Co., general contractors, to American Bridge Co.

1800 tons, cement plant for Florida Portland Cement Co., Tampa, Fla., to Virginia Bridge & Iron Co.

1500 tons, 15-story apartment, 825 Fifth avenue, New York, to Easton Structural Steel Co. instead of fabricator listed last week.

1200 tons, Clarke theater building, Pittsburgh, to Jones & Laughlin Steel Corp.

1000 tons, Roosevelt hotel, Pittsburgh, to Keystone Engineering Co., Morris Brown, Pittsburgh; Bethlehem sections specified and understood Bethlehem Steel Co. will furnish the steel.

1000 tons, two apartments and a factory building, New York, to an unstated local fabricator.

830 tons, apartment, 25-31 West Eighty-first street, New York, to the Dreier Iron Works.

800 tons, 15-story apartment, 129 East Twenty-first street, New York, to the Hay Foundry & Iron Works.

800 tons, electrification work for the Pennsylvania railroad on its Philadelphia-Wilmington division, to the Belmont Iron Works.

725 tons, St. Josephs hospital, San Francisco, to Dyer Bros.

650 tons, office building, Sansome and Pine streets, San Francisco, to Central Iron Works.

530 tons, building for Ohio Brass Co., Mansfield, O., through Hossler Bros., Tiffin, O., general contractors, to Mt. Vernon Bridge Co.

521 tons, for the following three items: Garage, 431 East Ninety-second street, New York, and building for the Lawyers' Mortgage Co., Mount Vernon, N. Y., both to McClintic-Marshall Co. and bank, Fourteenth street and Eighth avenue, New York, to George A. Just Co.

500 tons, Statler theater building, Buffalo, to R. S., McManus Steel Construction Co.

500 tons, apartment, Madison avenue and Seventieth street, New York, to the Harris Structural Steel Co.

500 tons, an office building and an apartment, New York, to an unstated local fabricator.

400 tons, two ferry boats, Southern Pacific Co., San Francisco, to Moore Drydock Co.

400 tons, Burlington passenger station, Lincoln, Nebr.; to Vierling Steel Works.

400 tons, building for the Pittsburgh Plate Glass Co., Creighton, Pa., to the Pittsburgh Bridge & Iron Co.

400 tons, addition to Kings County hospital, Long Island, N. Y., to the Easton Structural Steel Co.

350 tons, Western high school, Baltimore, to Dietrich Bros.

325 tons, high school auditorium and gymnasium, La Grange, Ill., to Midland Structural Steel Co.

314 tons, apartment, 104th street and West End avenue, New York, to the Easton Structural Steel Co.

275 tons, transmission towers, Hayden to Coolidge Damsite, Ariz., to Pacific Coast Steel Co.

250 tons, church of the Immaculate Conception, Philadelphia, to McClintic-Marshall Co.

250 tons, building for Celite Products Co., Lompoc, Calif., to McClintic-Marshall Co.

250 tons, building for the Church of Our Lady of Loretta, Bleecker and Elizabeth streets, New York, to the Harris Structural Steel Co.

210 tons, apartment, Hyde and Lombard streets, San Francisco, to Herrick Iron Works.

200 tons, one ferry boat for Southern Pacific Co., San Francisco, to General Engineering & Drydock Co.

200 tons, one ferry boat for Southern Pacific Co., San Francisco, to Bethlehem Shipbuilding Corp.

170 tons, theater, Philadelphia, to McClintic-Marshall Co.

153 tons, 160-foot bridge span over San Jacinto river, near Houston, Tex., for Houston North Shore railroad, to Austin Bridge Co.

110 tons, Singer office building, Boston, to A. L. Smith Iron Works.

100 tons, apartment, Clay and Van Ness avenue, San Francisco, to Golden Gate Iron Works.

CONTRACTS PENDING

30,000 tons, three Leftcourt units for use in the garment trade, Seventh avenue and Twenty-second street, plans being prepared by Schwartz & Gross, architects; the first unit, requiring 10,000 tons, is to be completed by December, 1928, with the following two units to follow a year and two years after, respectively.

2700 tons, building for United States reclamation service at Ellinsburg, Wash.; pending.

2000 tons, Cottage Farms bridge; T. Stuart & Son, Newton, Mass., awarded general contract.

2000 tons, Masonic building, Providence, R. I.; bids in.

2000 tons, power house at Chelan, Wash.; pending.

2000 tons, zinc plant at Kellogg, Idaho; pending.

1300 tons, Beth Israel hospital, Newark, N. J.; award expected shortly; Starrett Bros., New York, engineers in charge.

1200 tons, Lakeview apartment, Chicago; pending.

1200 tons, Ogden theater at Sioux City, Iowa; C. W. & G. L. Rapp, 190 North State street, Chicago, architects.

1100 tons, building for Goodyear Tire & Rubber Co., Akron, O.; bids in Oct. 6.

1000 tons, 6-story boys' club, 321-29 West 111th street, New York; bids asked.

1000 tons, 15-story apartment, Waverly place, New York; bids asked.

900 tons, power house extension for the Virginia Electric & Power Co., Norfolk, Va.; bids asked.

750 tons, building for Midwest Refining Co., at Denver, Colo.; pending.

700 tons, 15-story apartment, Ninety-first street and West End avenue, New York; pending.

700 tons, 16-story apartment for J. A. Moller, 150 East Fiftieth street, New York; bids asked.

700 tons, Coolidge Dam, San Carlos, Ariz., bids in Nov. 11.

650 tons, new plant for John Van Range Co., Cincinnati; bids in.

600 tons, cement plant at Mercedes, Calif.; pending.

600 tons, 12-story Friedenberg building, 584-90 Eighth avenue, New York; bids asked.

500 tons, highway bridge, Salem, N. J.; bids asked.

500 tons, Chamberlain theater, Pottsville, Pa.; pending.

450 tons, bank building, Central Square, Cambridge, Mass.; Boston Structural Steel Co. low bidder.

450 tons, 12-story apartment, Grand Concourse New York; bids asked.

400 tons, building for Philadelphia Gear Works, Philadelphia; pending.

400 tons, office building, Tampa, Fla.; bids asked.

400 tons, building for the Lake Placid club, Lake Placid, N. Y.; bids asked.

400 tons, apartment, Chestnut and Hyde streets, San Francisco; bids opened.

350 tons, 9-story apartment hotel for Morris Hyman, 30-34 West Ninetieth street, New York; bids asked.

300 tons, approximately, Virginia Dare hotel, Elizabeth City, N. C.; pending. W. L. Stoddard, New York, architect.

300 tons, parochial school, Fort Washington, Long Island, N. Y.; pending.

300 tons, grandstand, Illinois State Fair grounds, Springfield, Ill., for State of Illinois, pending John A. Nyden, 190 North State street, Chicago, state architect.

300 tons, approximate, Central State Bank building, Whiting, Ind.; Peterson & Johnson, Rockford, Ill., architects.

225 tons, Pioneer Rubber Co. plant, Pittsburg, Calif.; bids received.

200 to 300 tons, plant addition for Fisher Body Corp., Cleveland; Hunkin-Conkey Construction Co. awarded general contract.

200 tons, Magee hospital addition, Pittsburgh; bids being tabulated.

192 tons, Pistol river bridge, Oregon; general contract to C. J. Montag; steel not yet placed.

169 tons, apartment, Union and Van Ness avenues, San Francisco; bids being received.

150 tons, Waynesburg, Pa., school building; bids close Oct. 11.

150 tons, theater, Grove City, Pa.; William Holmes Crosby architect; bids being taken.

125 tons, Philmot Country club, Philadelphia; pending.

100 tons, theatre, Norwood, Mass.; bids in.

Unstated tonnage, new Masonic temple, Englewood, Ill.

Concrete Bars

Eastern Activity Features Heavy Buying Week—Small Lot Purchases Still Numerous

PLACING of 3350 tons for sewer work in Brooklyn, N. Y., features a week of heavy buying in concrete reinforcing bars. A building in Boston took 2000 tons. Despite keen foreign competition about 7000 tons went to domestic makers in the East. Action is expected soon on the 9000-ton Lake Pontchartrain, La., bridge. Prices hold steady.

REINFORCING BAR PRICES, PAGE 930

New York, Oct. 5.—Unusual activity has featured the concrete reinforcing bar market here. The banner order involves 3350 tons for a sewer in Brooklyn. About 1000 tons additional for bridges between Staten Island and New Jersey has been placed. At least five other jobs, involving 100 tons or more each, have been placed on the books of the bar sellers. Despite keen foreign competition, all of these orders went to sellers of domestic steel. Indications are that the Raymond Concrete Piling Co. will take action in about a month for the 9000 tons of bars for the bridge at Lake Pontchartrain, Louisiana. Action is expected this week on 2000 tons for the Kymson building, New York.

Boston, Oct. 5.—Slightly better conditions are reported in the concrete bar market. Prices still lack strength but prospective work is in better volume. The mill price is 2.265c, delivered, and the Boston warehouse price 3.00c.

Pittsburgh, Oct. 5.—One important fabricator of reinforcing concrete bars has made a canvass of the industrial trade. He sent out 1500 letters and within three days received inquiries representing $150,000 to $200,000 worth of work. Since that tabulation, a similar amount of work has taken the form of inquiry. Awards continue small but evidently the outlook for industrial building is brighter. The mill price is 2.00c, with warehouse levels at 2.50c.

Buffalo, Oct. 5.—Reinforcing bars show increased activity although demand is smaller than during the rush of business which developed in the third quarter. New bookings of the week include one of 200 tons of rail steel and one of 125 tons. Several projects are about to be closed including one lot of 250 tons. The mill shipment price is 2.265c and 2.75c is the quotation of direct sellers on stocks from their warehouses. Mill operation has been cut slightly in the district but holds above 80 per cent of capacity.

Cleveland, Oct. 5.—Although several concrete bar awards were made in this district during the past week, including 900 tons for the Girard, O., bridge to Carnegie Steel Co., small lot business continues prevalent. Several sellers claim inquiries for the week would not total 500 tons. New billet bar prices hold at 2.19c Cleveland or 2.00c Pittsburgh. Rail steel is steady at 1.80c mill. Fourth quarter contracting has not developed as fully as expected, although several road-builders are figuring spring 1927 programs with a view to covering their needs this quarter.

Chicago, Oct. 5.—Awards of reinforcing steel for numerous small building projects are being closed steadily, but some of the important jobs involving heavy bar tonnages are hanging over. The committee to enforce the Landis award announces a fair gain in values and volume of building in September as compared with a year ago. Bids have been received and general contracts awarded for a number of new jobs in the past week, including 16 apartment buildings and apartment hotels, five combination apartment-store-office buildings, four automobile buildings, and various other structures. Competition is keen for reinforcing bar work.

Awards Compared

	Tons
Awards this week	12,220
Awards last week	8,140
Awards two weeks ago	4,860
Awards this week in 1925	3,857
Average weekly awards, Sept...	6,347
Average weekly awards, 1926....	6,337
Total awards to date, 1925	246,912
Total awards to date, 1926	259,380

CONTRACTS PLACED

3350 tons, storm sewer, Coney Island, Brooklyn, N. Y., to Concrete Steel Co., through Carozza Rowe Construction Co.

2000 tons, factory addition, W. F. Schrafft & Sons Corp., Boston, through Turner Construction Co. to Kalman Steel Co.

900 tons, bridge, Girard, O., through Stange Construction Co., to Carnegie Steel Co.

550 tons, rivet grip bars for vaults of Federal Reserve bank, Cincinnati, to Rivet Grip Steel Co.

500 tons, bridge between Elizabeth, N. J., and Howland Hook, Staten Island, to Concrete Steel Co., through the Triest Contracting Co.

500 tons, bridge between Perth Amboy, N. J., and Tottenville, Staten Island to Kalman Steel Co., through the P. J. Carlin Construction Co.

500 tons, Peck & Hills Furniture Co. warehouse, Chicago, to Olney J. Dean & Co.

400 tons, plant for Pacific Sanitary Mfg. Co., at Richmond, Calif., to an unstated San Francisco jobber.

400 tons, coagulation basin, Division street west side filtration plant, Cleveland, to Bourne-Fuller Co.

250 tons, Fort Shelby hotel, Detroit, to McRae Steel Co. Plans changed, originally required 400 tons of reinforcing. Structural requirements have been increased and concrete decreased.
250 tons, chamber of commerce building, Cincinnati, to Pollak Steel Co.
250 tons, building for the McCall Publishing Co., Dayton, O., to the Kalman Steel Co., through Hughes, Foulkrod & Co., Pittsburgh, general contractor.
200 tons, Manufacturers & Traders Trust Co. building, Buffalo, N. Y., to Buffalo Steel Co.
200 tons, Passaic County sanitorium, Haledon, N. J., to Joseph T. Ryerson & Son Inc.
260 tons, joists for superstructure of Hollenden hotel addition, Cleveland, to Rivet Grip Steel Co.
175 tons, two Pennsylvania highway commission jobs, Indiana county 100 tons, Blair county 75 tons, to the Truscon Steel Co.
150 tons, school, LaSalle, Ill., to Joseph T. Ryerson & Son Inc.
130 tons, Washington Heights subway, New York, to the Fireproof Products Co., through the La Rocca Construction Co.
125 tons, Pennsylvania highway project, to Kalman Steel Co.
120 tons, Soldiers-Sailors Memorial bridge, Harrisburg, Pa., to American Steel Engineering Co.
110 tons, Atlantic Coast Line locomotive repair shop, Uceta, Fla., to unstated fabricator, through Dwight P. Robinson & Co., Inc.
100 tons, apartment at Steubenville, O., to the Truscon Steel Co.
100 tons, Julius Kinderman building, New York, to Concrete Steel Co., through Barney-Ahlers Construction Corp.
100 tons, Standard Oil Co. building, Mill Basin, L. I., N. Y., to Kalman Steel Co., through Joseph L. Burke Corp.
100 tons, work for New York, Westchester & Boston Railway Co., White Plains, N. Y., to unstated fabricator, through New York, New Haven & Hartford Railroad Co.
100 tons, building for Lakewood Storage Co., Cleveland, to Paterson-Leitch Co. Steel to Franklin Steel Works.
100 tons, power house and 400-foot tunnel for Chrysler Motor Corp., Detroit, to McRae Steel Co.
100 tons, 4-story Hopcraft garage, Jefferson avenue, Detroit, to McRae Steel Co.
100 tons, power house for Kiefler hospital, Detroit, to McRae Steel Co.
100 tons, two bridges over Illinois Central tracks, Chicago, to Concrete Steel Co.

CONTRACTS PENDING

2000 tons, building for Kymson Building Corp., New York; general contract to R. W. Smith Construction Co.
500 tons, Cottage Farms bridge, Boston; T. Stuart & Son, Newton, Mass., awarded general contract.
400 tons, garage, Boston; bids in.
400 tons, Tasty Baking Co. building, Philadelphia; pending.
220 tons, school, Baltimore street and Thomas avenue, Philadelphia; pending.
200 tons, Montefiore hospital, Pittsburgh; bids close Oct. 18.
120 tons, Church of the Heavenly Rest, New York; pending.

Plan Hardware Meeting

The National Hardware association of the United States has announced the preliminary program for its thirty-second annual convention which is to be held at the Ambassador, Atlantic City, N. J., Oct. 18-22. Monday and Tuesday will be devoted to meetings of the accessories branch. The opening session of the general convention will be on Tuesday evening with James J. Davis, secretary of labor, Washington, as speaker. Wednesday, Thursday and Friday are reserved for executive sessions. A topic for discussion on Wednesday and Thursday afternoons is "Advantages of National Advertising to the Wholesaler and Retailer." The meeting of the metal branch will be held Thursday afternoon.

Rails, Cars

Equipment Market Shows More Signs of Life—Rail Orders Expected

RAILROAD equipment interest shows improvement. One western road is reported contemplating scrapping about 10,000 cars and replacing 75 per cent with new equipment. September car awards totaled 3335. Louisville & Nashville is reported to have closed on 67,600 tons of rails. Seaboard Air Line has just appropriated funds for 3400 cars placed last spring.

RAILROAD TRACK MATERIAL PRICES, PAGE 930

New York, Oct. 5—The railroad equipment market is featured by several substantial locomotive awards.

Domestic freight car buying in September involved 3335 cars, of which 2000 were for the American Refrigerator Transit Co. That total compares with 152 in August and 1265 in July. Following is a comparative statement:

September	3,335
August	152
July	1,265
June	4,285
May	448
April	4,615
March	8,995
February	12,895
January, 1926	8,830
December	16,885
November	11,685
October	11,145
September	7,905
1923 total	103,487
1924 total	144,425
1925 total	77,110

Boston, Oct. 5.—Moderate buying of railroad supplies and track material has developed. Some heavy rail tonnages for 1927 are looked for soon.

Pittsburgh, Oct. 5.—Expansion in coal mining in West Virginia as well as Pennsylvania is responsible for considerable betterment in the light rail industry. More orders have been received, and $36 is now the firm market price. Additional fourth quarter contracts have been entered at that level. Several orders for small spikes have been taken at 2.90c, to accompany these light rail orders.

Chicago, Oct. 5.—Some substantial rail tonnage is being booked for 1927 needs. It is estimated mills in the district have taken 125,000 tons, including fastenings, from five roads the past week. Total inquiry now outstanding, largely from western roads, calls for 500,000 tons. In addition, several roads have placed hurry-up orders for standard rails and fastenings for shipment in November, totaling 10,000 tons.

Orders for 15,000 cars are in sight from three roads. The Chicago, Milwaukee & St. Paul and Louisville & Nashville inquiries call for 3000 cars in addition to those in prospect from the Chicago & North Western. The Louisville & Nashville inquiry calls for 1000 steel gondola, 250 stock cars and 250 automobile cars. The Missouri Pacific inquiry, expected to come out shortly, may require 3000 to 4000 freight cars.

Birmingham, Ala., Oct. 4.—Rail mills continue active production schedules. Local requirements are heavy. The first large rail order of the present buying movement is from the Louisville & Nashville for 67,600 tons for 1927 delivery, the contract reported as going to the Tennessee Coal, Iron & Railroad Co.

Monterey, Mex., Oct. 2.—National railways of Mexico have received through the port of Tampico a shipment of 1720 tons of 90-pound steel rails from Antwerp, Belgium. The steel will be used for relaying the track on part of the Cardenas division of the system.

CAR ORDERS PLACED

Chicago & Northwestern, 500 stock car bodies, to the Illinois Car & Mfg. Co.
Cities Service Tank Line, 60 tank cars, divided equally between American Car & Foundry Co. and General American Car Corp.
Consolidation Coal Co., 100 mine cars, to Lorain Steel Car Co.
Consolidated Railroads of Cuba, six gasoline rail motor cars, to J. G. Brill Co.
Miscellaneous orders, approximately 120 tank cars, to the Standard Tank Car Co.
Pennsylvania railroad, electrical equipment on 93 motor-driven coaches, to the Westinghouse Electric & Mfg. Co.

LOCOMOTIVE ORDERS PLACED

Argentine State railways, 20 locomotives, to the Baldwin Locomotive Works.
Belt Railway of Chicago, five switch engines, to the Baldwin Locomotive Works.
Central of Brazil, 28 locomotives, to the Baldwin Locomotive Works. Formerly noted placed by South American railroads.
Norwood & St. Lawrence, one locomotive, to the Baldwin Locomotive Works.
Pennsylvania railroad, four electric passenger locomotives, to the Westinghouse Electric & Mfg. Co.
Seaboard Air Line, 50 locomotives, to the Baldwin Locomotive Works.

CAR ORDERS PENDING

Buffalo, Rochester & Pittsburgh, heavy repairs on 500 to 1000 steel hoppers; pending.
Central of Georgia, 20 caboose underframes; pending.
Louisville & Nashville, 1000 steel gondolas, 250 stock and 250 automobile cars; announced last week, now pending.

LOCOMOTIVE ORDERS PENDING

Mukden Hailung, China, four switch and two passenger engines; bids asked.

A petition in bankruptcy has been filed by the Ocean Ship Chandlery Co., Ltd., 60 Pearl street, New York, showing liabilities of $30,777 and assets of $6566.

Wire

Orders at Prevailing Prices Continue To Be Booked—Some Shading in Nails

CONSUMERS of wire and its products are contracting freely at the present range of prices, which show firmness, except for some shading on nails by Southern Ohio makers. Jobbers are replacing stocks in small lots. Inspite of poor crop prospects better buying of fencing is being met. Demand for nails is largely from industrial users.

WIRE PRICES, PAGE 930

Chicago, Oct. 5.—Fourth quarter contracting for wire and wire products is proceeding steadily and without hesitancy on the part of buyers, on the present price basis. Prices are firmer than several months ago. Specifications and buying from manufacturing lines continue to lead, but jobbing demand is fair considering the crop outlook in middle western areas. Demand is improving for barbed wire and woven fencing. Nails are in heaviest demand from industrial sources. Plain wire is 2.55c and nails 2.70c, western mills.

Boston, Oct. 5.—Wire netting and wire specialties are in better demand. Production of plain wire in New England mills fully holds its own. The nail demand has shown a marked increase during the past week. The price of plain wire is unchanged at 2.65c Worcester.

Pittsburgh, Oct. 5.—Wire products orders are not plentiful but maintain a fair total each week. Makers are unable to increase operating schedules but maintain an average of 50 to 60 per cent. The Youngstown Sheet & Tube Co., which some time ago discontinued the manufacture of fence, reports that a number of its former mixed carload buyers are going elsewhere for nails, wire and fencing as many take only a single mixed carload at a time. Demand for fence generally has fallen off considerably. Local manufacturers still report they encounter price competition on the part of southern Ohio nailmakers; otherwise, 2.65c base, is firm with 2.50c applying on plain wire. A number of wire customers have started to specify against fourth quarter contracts. Jobbers replace stocks as fast as they sell, and usually specify a single carload at a time.

Bolts, Nuts, Rivets

Consumers Covering Well for Fourth Quarter at Prevailing Prices

NUT AND BOLT PRICES, PAGE 930

Chicago, Oct. 5.—Bolt and nut consumers will soon be covered for fourth quarter on the basis of quotations that prevailed for third quarter. Implement makers are specifying steadily, as discouragement in the crop outlook diminishes. Indications point to a better corn crop in the Middle West than had been expected ten days ago. Implement business still is below indications of two months ago, September buying and specifications of bolts and nuts are close to September of last year. Demand is steady for structural rivets.

Pittsburgh, Oct. 5.—A fair number of orders were taken the past week for nuts and bolts, and several attractive specifications on rivets were received. It is not believed by representative makers here, however, the the fourth quarter aggregate will be as large as that for third quarter. Some railroads have been buying and structural shops specifying fairly liberally. Prices are unchanged.

Cold Finished Steel

Third Quarter Best of Year and Shipments Hold Well

Pittsburgh, Oct. 5.—The quarter just closed was exceptionally good for cold bar finishers. It was much better than the second quarter, which in turn was better than the first. The fourth quarter will hardly maintain the same ratio of improvement as several consuming lines, including the automotive industry, will naturally fall off a trifle. Up to the present, however, while individual buyers in the automotive lines have reduced their specifications, as a whole that industry continues to take out a large aggregate tonnage each week. The operating average is between 60 and 65 per cent.

Strip Steel

Strip Steel Users Well Protected—Prices Holding

STRIP PRICES, PAGE 930

Pittsburgh, Oct. 5.—Regular customers of strip steel makers here are well protected for last quarter. Most buyers, however, are buying on a weekly or monthly basis without contracts. Specifications are plentiful and strip mills are able to maintain operating schedules at 80 or 85 per cent. A few cold strip makers cannot do better than 70 per cent. Diversified lines of consumption are represented. Prices are firm on hot, 2.30c; but deviations on cold still occur from 3.60c, although nothing below 3.50c has as yet been developed.

Cleveland, Oct. 5.—Curtailed automotive output due to changing models by several makers has been reflected in the strip market, specifying last week having dropped off. Hot strip buying continues in good volume, with prices firm at 2.50c on narrow and 2.30c on wide sizes. Cold strip is steady at 3.40c Pittsburgh with tubing stock holding at 3.25c for the general run of business.

Refractories

Sustained Buying Rules and Prices Hold Steady

REFRACTORY PRICES, PAGE 972

Pittsburgh, Oct. 5.—Sustained rather than buying rules in the refractories industry. Steady purchases on the part of steel mills generally, in harmony with their sustained high operating rates, are enabling producers to operate at 70 to 80 per cent of capacity, and some would be on an even higher basis but for a shortage of men. A few blast furnace linings have been purchased recently, including one for the Shenango Furnace Co., Sharpsville, Pa.; two for blast furnaces in New York state and several for stock. Improvement registered in September over August in new buying and shipment reached as high as 30 per cent in some cases. Prices are somewhat firmer on fire clay brick but no advance has materialized. The last advance in silica brick is now universal. Some makers quote $45 and $65 on chrome and magnesite brick, respectively—others quote $5 higher.

Sheet Ware Output Up

Washington, Oct. 5.—Production of galvanized sheet metal ware in August totaled 172,066 dozens compared with 147,410 dozens in July, according to reports of 12 manufacturers to the department of commerce. Pail and tub production was 127,366 dozens and other output 44,700 dozens in August. Further comparisons are presented in the following tables:

PAILS AND TUBS
In Dozens

1926	Production	Stocks on hand end month	Orders shipped
January	148,537	115,087	150,430
February	138,159	125,002	124,955
March	120,396	125,837	116,036
April	91,707	109,858	109,228
May	95,929	108,672	103,455
June	87,205	104,435	96,437
July	108,631	92,340	119,663
August	127,366	86,963	134,323

OTHER
In Dozens

1926			
January	38,526	61,335	43,441
February	51,658	62,507	48,620
March	60,177	66,989	56,119
April	44,434	60,731	48,182
May	57,568	61,047	49,926
June	54,937	64,308	48,940
July	38,779	57,820	41,652
August	44,900	56,208	44,911

Nonferrous Metals

Shipments Continue Large But New Buying Is Light—Improved Demand Expected to Develop Soon—European Outlook Better

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Spot Straits Tin, N. Y.	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Sept. 29	14.25	14.37½	13.80	70.25	8.72½	8.40	7.37½	27.00	14.00	35.00
Sept. 30	14.25	14.37½	13.80	69.62½	8.70	8.40	7.37½	27.00	14.50	35.00
Oct. 1	14.25	14.37½	13.80	71.00	8.65	8.37½	7.37½	27.00	14.25	35.00
Oct. 4	14.25	14.37½	13.85	71.75	8.65	8.35	7.35	27.00	13.75	35.00
Oct. 5	14.25	14.37½	13.80	71.50	8.62½	8.35	7.35	27.00	13.75	35.00

NEW YORK, Oct. 5.—With shipments of nonferrous metals continuing large but new purchases light, the impression is gaining ground that more active buying soon will have to be done. This notion is in the face of a rather frank disappointment among many interests that buying has been held off though it was expected to pick up "after Labor day".

The idea that buying soon will have to become more active stands on two legs: One that business at large will continue of good size through the latter part of the year even though some trades should let down, and the other that most interest is in prompt shipment, meaning that consumers have little material on hand.

Developments in Europe point to better markets over there but it also becomes more plain that no permanent gain can be made in a hurry.

Copper—The market has held unusually steady at 14.25c delivered (14.37½c to 14.40c Midwest) lately. After the price cutting in September it became apparent in the past week that the market had struck a point where producers were showing much resistance. Meanwhile consumers have worn an indifferent air but now it looks as if some of them were more interested in covering early needs. Shipments continue large and mills are specifying against their old orders rapidly. In turn the mills are making good shipments of products, but their sales also are light. In a few instances they are well booked into November but for the most part their backlogs are short, and this is especially true in copper wire. Not much business has been done in copper for export.

Zinc—The prime western market has sagged a little but on the whole the market continues to fluctuate within a narrow range. Specifications now indicate good shipments this month though buying the past week has been light. Little has been sold beyond October. High grade is firm at 9.00c.

Tin—The plating metal continues to skyrocket. A strong situation in spot and nearby metal is the outstanding characteristic. Consumption continues on a high level and supplies remain restricted. However, in the past month shipments from the Straits and the Banca producer were of good size and world visible supplies increased 1027 tons to 14,379 tons. This was more than the trade expected, yet prices continued to rise. The point was that the increase in visible meant no definite relief. Futures have gone up about the same as spot and are 2¼ to 3 cents under spot.

Lead—The market has slipped off several points, as expected. The open market is the same as the price of the American Smelting & Refining Co. at 8.65c, the latter having been cut 10 points Oct. 1. Buying is light and mostly for prompt.

Aluminum—The light metal is in a firm market and prices are unchanged and shipments active.

The Player hot-blast stove for blast furnaces was introduced in the United States in 1867, the Whitwell hot-blast stove in 1875, and the Siemens-Cowper-Cochrane stove in 1877.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	19.37½
Copper, hot rolled	23.00
Zinc, (100-pound base)	11.75
Lead full sheets (cut ¼c more)	12.50 to 13.00
Aluminum, bright flat, up to 10 gage	36.50
SEAMLESS TUBES	
High brass	24.25
Copper	25.00
RODS	
High brass (round ⅝ to 2½-inch)	17.12½
Naval brass	19.87½
WIRE	
Copper, small lots	16.50
High Brass	19.87½

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	8.75 to 9.00
Chicago	9.00 to 9.25
Cleveland	9.25 to 9.50
HEAVY YELLOW BRASS	
Chicago	8.00
Cleveland	7.25 to 7.50
ZINC	
New York	4.25
Cleveland	5.00 to 5.25
HEAVY COPPER AND WIRE	
New York	11.75 to 12.00
Chicago	10.75 to 11.50
Cleveland	11.50 to 11.75
RED BRASS BORINGS	
New York	8.25 to 8.50
YELLOW BRASS TUBING	
Cleveland	7.50 to 7.75
LIGHT COPPER	
New York	9.50 to 9.75
Chicago	9.50 to 9.75
Cleveland	10.00 to 10.25
LIGHT BRASS	
Chicago	7.25
Cleveland	6.25 to 6.50
ALUMINUM	
Clippings	21.00 to 22.00
Borings, Cleveland	13.00 to 13.50
Cast	18.50 to 19.00

Secondary Metals

Remelt aluminum No. 12	22.50 to 23.00
Brass ingot, 85-5-5-5	12.25 to 12.50

Coke By-Products

Backlogs Sustain Ammonia Sulphate—Naphthalene Slow

New York, Oct 5.—The coal tar distillates market remains steady. Demand is well maintained and prices are unchanged. Pure and 90 per cent benzols are holding at 25 cents, works, per gallon for material in tank car lots, and 30 cents, in drums; toluol and solvent naphtha, 35 cents, works, in tanks, and 40 cents, in drums and commercial xylol 36 cents, works in tanks, and 41 cents, in drums.

Trading in naphthalene is sluggish, with prices unchanged at 6 to 7 cents, works, for flakes and 7 to 8 cents for balls. Phenol is featureless at 22 cents, works.

Activity in sulphate of ammonia is confined almost entirely to shipments on back contracts. These shipments have been sufficient to keep stocks at low ebb with a result that prices are showing no weakness.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contract
Pure benzol	$0.25	
90 per cent benzol	0.25	
Toluol	0.35	
Solvent naphtha	0.35	(nominal)
Commercial xylol	0.36	(nominal)
Phenol	0.22	0.22

Per Pound at Producers' Plants

Naphthalene flakes	0.06 to 0.07
Naphthalene balls	0.07 to 0.08

Per 100 Pounds Delivered

Sulphate of ammonia	2.47½	

Sell Over 10,000 Tons

New York, Oct. 5.—Importers report taking orders for over 10,000 tons of European steel, chiefly bars and shapes, from interests located close to tidewater along the Atlantic and the Gulf. Some of the steel is to be delivered over the first quarter. Importers report prices are higher on these products, now ranging from 1.75c to 1.90c, duty paid, tidewater.

Warehouse

Sales Volume Slightly Below Early September But Heavy for Season—Sheet Prices Come Into Line With Mill Revisions

ALTHOUGH slightly behind the first week in September, October sales from iron and steel warehouse are heavy for the season. Increased business was reported for the first two days of this week by some jobbers. Warehouses generally are coming into line with the recent $2 a ton increase by sheet mills.

Sheet prices on warehouse stocks have been equalized this past week and No. 24 gage now is quoted at 3.95c. No. 24 gage galvanized has been advanced to 4.80c. Demand keeps up almost too well, since it is difficult to maintain sufficient stocks to meet promptly demand for quick deliveries. Semifinished steel demand involving billets, sheet bars and skelp from warehouse is increasing. September shows fair increases in tonnages over August, and October promises to maintain that ratio of betterment. Prices are unchanged.

October is starting off in brisk fashion in the New York metropolitan warehouse market. All lines appear to be moving freely, with a particular improvement noted in blue annealed and galvanized sheets. The market on these products appears stronger than in weeks. Prices are firm. Jobbers generally report September a better month than August.

Cleveland jobbers continue to receive an even flow of business. Bookings the past week were slightly under those of the week previous, but in the past few days have shown recovery. Sheet prices have been advanced $2 a ton in harmony with recent mill advances. Blue annealed sheets now are 3.25c, black sheets 3.80c and galvanized 4.65c. These prices, effective Oct. 1, were established without difficulty. Demand continues strong.

Detroit jobbers notice no change in the warehouse situation there. Demand continues steady. Considerable emergency tonnage is being placed, especially by automobile manufacturers whose production is exceeding early estimates.

The feature in the warehouse trade in St. Louis during the last week has been buying from the Mid-Continent oil fields, where structurals are in demand for replacement purposes.

(*Concluded on Page* 945)

Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.15c
Ft. Worth	3.75c
Los Angeles	3.20c
New York	3.24c
Philadelphia	3.00c to 3.20c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.80c

IRON BARS

Boston	3.265
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
Ft. Worth	3.75c
New York	3.24c
Philadelphia	3.00c to 3.20c
St. Louis	3.15c
Tulsa	3.80c

REINFORCING BARS

Boston	3.265 to 3.50c
Buffalo	3.30c
Chicago, billet	2.40c to 2.60c
Chicago rail steel	2.00c
Cincinnati	3.20c to 3.30c
Cleveland	2.50c to 3.00c
Detroit	3.15c
Ft. Worth	3.75c
Los Angeles, C.L.	3.05c
Los Angeles, L. C. L.	3.30c
New York	3.15c
Philadelphia	3.15c
Pittsburgh	2.50c to 2.60c
San Francisco, C. L.	3.35c
San Francisco, L C. L.	3.80c
Seattle	3.25c
St. Louis	3.15c
Tulsa	3.80c
Youngstown	2.50c to 2.60c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.25c
Ft. Worth	4.50c
Los Angeles	3.20c
New York	3.34c
Philadelphia	2.75c to 3.00c
Pittsburgh	3.00c
Portland	3.10c
San Francisco	3.30c
Seattle	3.35c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.80c to 4.16c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleveland, 3/16-inch	3.225c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Ft. Worth	4.50c
Los Angeles	3.20c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.75c to 3.00c
Philadelphia, 3/16-inch	2.90c to 3.20c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.80c

NO. 10 BLUE ANNEALED SHEETS

Boston 3/16-inch	3.915c
Buffalo	3.80c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.65c
Los Angeles	3.75c
New York	3.89c
Portland	4.25c
Philadelphia	3.40c
Pittsburgh	3.40c
San Francisco	3.90c
Seattle	4.25c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.05c to 4.20c

NO. 24 BLACK SHEETS

Boston	5.10c
Buffalo	4.30c
Chicago	3.95c
Cincinnati	4.05c
Cleveland	3.80c
Detroit	4.10c
Ft. Worth	4.70c
Los Angeles, No. 28	4.75c
New York	4.35c
Philadelphia	4.25c
Pittsburgh	3.95c
Portland	4.90c
San Francisco	4.90c
Seattle	4.90c
St. Louis	4.45c
St. Paul, No. 24	4.20c
Tulsa, No. 28	5.00c

NO. 24 GALVANIZED SHEETS

Boston	5.80c
Buffalo	5.15c
Chicago	4.80c
Cincinnati	4.90c
Cleveland	4.65c
Detroit	5.05c
Ft. Worth	5.90c
Los Angeles (corr. 28 ga.)	6.00c
New York	5.10c
Philadelphia	5.20c
Pittsburgh	4.80c
Portland	5.75c
San Francisco, No. 28	6.00c
Seattle	5.75c
St. Louis	5.25c
St. Paul, No. 24	5.15c
Tulsa, No. 28	6.00 to 6.31c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.80c
Ft. Worth	4.40c
Los Angeles	4.05c
New York	3.99c
Philadelphia	3.75c to 3.90c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.25c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cleveland	3.65c
Detroit	4.30c
New York	4.49c
Philadelphia	4.00c to 4.25c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds and hexagons	Flats and squares
Boston	4.05c	4.55c
Buffalo	3.90c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.90c	4.40c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.

COLD ROLLED STRIP

Boston, 0.100 inch, 500 lbs. lots	6.15c
Buffalo	6.35c
Chicago	6.25c
Cincinnati	7.15c
Cleveland, over 500 lbs. lots	5.95c
Detroit	6.20c
New York	6.25c
Philadelphia	6.25c
Pittsburgh	6.30c

FOREIGN IRON AND STEEL

New York duty paid

Swedish, hollow drill steel	15.00c
Swedish iron bars round	6.75c
Flats and squares	7.00c

WELDED PIPE

Discounts from warehouse, New York City Standard Steel Pipe

WROUGHT STEEL PIPE

	Black	Galvanized
⅛-inch butt	—28	+21
¼ to ⅜-inch butt	—36	— 3
½-inch butt	—46	—29
¾-inch butt	—51	—37
1 to 3-inch butt	—53	—39
2-inch lap	—40	—22
2½ to 6-inch lap	—48	—35
7 and 8-inch lap	—44	—17
9 and 10-inch lap	—38	—14
11 and 12-inch lap	—37	—12

WROUGHT IRON PIPE

	Black	Galvanized
¼ to ⅜-inch butt	+44%	+78%
½-inch butt	— 4	+19
¾-inch butt	— 1	+ 9
1 to 1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
2½-inch lap	— 9	+ 6
3 to 6-inch lap	— 3	+ 6
7 to 12-inch lap	— 3	+16

Coast Trade Is Better

Shape and Plate Demand and Sales Increase—Pig Iron and Pipe Continue Slow—Prices Steady

SAN FRANCISCO, Oct. 2.—(*By Air Mail*)—Awards and inquiries for structural steel and plates featured the market this week. Movement in other lines of steel products was by no means heavy. With few exceptions, noticeably merchant and reinforcing bars, prices on most steel commodities are firm. The foreign situation, as regards imports of bars and shapes, is having a decided effect upon the market here and local producers have had to meet some rather low prices. General business conditions appear to be improving somewhat and the undertone of the market is firm.

Pig Iron and Coke

No action has been taken by the Southern Pacific Co., San Francisco, on its inquiry for 1000 tons of 2.75 silicon foundry iron. This company has purchased about 50 tons of bessemer iron from a Chicago furnace. During the past week one importer has unloaded 6500 tons of foreign foundry coke to apply against orders placed some time ago. Prices remain the same as quoted last week.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah Foundry	25.00 to 26.00
*English (2.75 to 3.25 sil.)	25.00
*German	24.25
*Belgian	22.00
*Indian	25.00
*Dutch	22.00

*C.i.f. duty paid.

Bars, Plates and Shapes

Only one award of over 100 tons of concrete bars was reported this week. A San Francisco jobber booked 400 tons for a plant at Richmond, Calif., for the Sanitary Mfg. Co. A number of fair-sized jobs are being figured, the total exceeding 8000 tons. The two largest projects call for 3300 tons for piers in San Francisco and 2250 tons for the Coolidge dam in Arizona, bids on the latter to be opened Nov. 11. Prices now range from 2.30c to 2.35c on large lots from stock, while 2.40c to 2.45c holds for smaller offerings. The Western Harvester Co., Stockton, Calif., has not closed on its inquiry for 600 tons of merchant bars, 290 tons of shafting and 600 tons of sheets. It is thought local producers will receive the order for the bar and sheet tonnage.

Interest centers around the two inquiries of the Southern California Edison Co., Los Angeles, for two syphon projects, one at Shaver Lake calling for 6500 tons and one at Mono Bear involving 1250 tons, a total of about 8000 tons, bids on which will be opened Oct. 4.

Awards this week totaled 1600 tons for four ferryboats for the Southern Pacific Co. Moore Drydock Co. booked two, calling for 800 tons, General Engineering & Drydock Co., one, involving 400 tons, and Bethlehem Shipbuilding Corp. one requiring 400 tons. Pending business exceeds 10,000 tons, including 500 tons for the La Mesa pipeline and 200 tons for a pipeline at Yakima, Wash. Prices continue firm at 2.30c c.i.f. as a minimum.

Awards of structural shapes were the heaviest in over five weeks and aggregated 3000 tons. Among the larger lots were 725 tons for St. Joseph's hospital, San Francisco, booked by Dyer Bros., 650 tons for an office building, Pine and Sansome streets, San Francisco, placed with the Central Iron Works and 800 tons for four ferryboats for the Southern Pacific Co., awarded to three builders and 250 tons for the Celite Products Co. plant at Lompoc, Calif., booked by McClintic-Marshall Co. No action has been taken by the Western Harvester Co., Stockton, on its inquiry for 800 tons of shapes. Pending business calls for over 10,000 tons. New inquiries include 700 tons for the Coolidge dam, Arizona, and 400 tons for an apartment in San Francisco. Prices continue firm at 2.35c, c.i.f.

Other Finished Material

Only one cast iron pipe award was noted this week. Grinnell Co. booked 287 tons for Santa Cruz, Calif. A number of projects are up for figures, the total exceeding 6000 tons. New inquiries include 420 tons for Yakima, Wash., and 100 tons for Santa Ana, Calif. Movement of standard pipe has not been heavy, most orders involving small lots. Bids were opened this week on 950 tons for La Mesa, Calif., and bids will be opened next week for 468 tons of plain end pipe for Yakima, Wash.

Little of interest has developed in the sheet market. The Western Harvestor Co., Stockton, Calif., will probably place its inquiry for 600 tons of galvanized sheets with local producers. To date only Wheeling Steel Corp., has advanced prices, but it is thought the other companies will follow suit.

Engineers Open Meeting

Pittsburgh, Oct. 5.—The one hundred and thirty-fourth general meeting of the American Institute of Mining and Metallurgical Engineers opened here today. While regular sessions do not start until Wednesday, meetings of the open-hearth committee were held today in the William Penn hotel, and a coke conference took place in the bureau of mines experiment station.

Following registration at Hotel Schenley, a general meeting and reception was held at Carnegie Music hall. Samuel A. Taylor, president, welcomed the delegates and John S. Unger, manager, central research bureau, Carnegie Steel Co., responded. Presentation and discussion of papers on coal and coke, and iron and steel constituted the afternoon meeting in the Carnegie institute, the program closing for the day with a smoker in the Pittsburgh Athletic association at 8 p. m.

Delegates will be entertained on Thursday by a boat ride on the Monongahela river, short stops being made at the National Tube Co. works at McKeesport, the Carnegie Steel Co.'s plant at Clairton, and the rolling mills at Duquesne, Pa. The annual banquet will be held in the Hotel Schenley, Friday evening, after another day of business and discussions and demonstrations in the afternoon at the bureau of mines experiment station at Bruceton. On Saturday, group trips have been arranged for delegates to inspect iron and steel works, coal mines, cement plant, glass works, power plants, chemical works and other industries in the Pittsburgh district.

Manufacturers Meet

New York, Oct. 5.—Judge E. H. Gary, chairman, United States Steel Corp., will preside at the industrial preparedness luncheon to be held at the Waldorf-Astoria hotel, Thursday, Oct. 7, in connection with the thirty-first annual convention of the National association of Manufacturers, which opens here today. Speakers include Hanford MacNider, assistant secretary of war; John E. Edgerton, president of the association and Major General C. C. Williams, chief of ordnance, United States navy.

Other events of the convention program include the annual dinner of the association and the eighteenth, semiannual dinner of the National Industrial council, which takes place Wednesday evening. Rear Admiral Charles P. Plunkett, will address the convention on the importance of the American merchant marine, while other speakers will talk on immigration, transportation, aviation, the open shop and taxation.

The first blast furnace in Pittsburgh was built about 1792.

Machinery Exports Show Decline in August

Exports of industrial machinery from the United States during August amounted to $11,820,610, as compared with $14,687,489 for the corresponding month of 1925 and $14,173,036 for July, 1926, according to statistics compiled by the industrial machinery division of the department of commerce, Washington. The monthly exports of industrial machinery during 1925 and the current year are as follows:

	1925	1926
January	$ 10,460,904	$13,240,765
February	8,756,543	10,996,707
March	13,703,013	12,780,741
April	13,212,401	16,100,036
May	12,430,682	12,273,853
June	10,974,403	11,114,816
July	13,401,637	14,173,036
August	14,555,365	11,820,610
September	12,117,379	.....
October	12,487,739	.....
November	12,592,019	.....
December	12,975,027	.....
Total	$149,667,012	.....

Exports of the five important classes of industrial machinery during August, as compared with the corresponding month of 1925, were as follows:

Class of machinery	Aug., 1925	Aug., 1926
Power generating machinery, except electric and automotive	$ 1,557,620	$ 1,323,272
Construction machinery..	1,164,297	1,074,766
Mining, oil-well and pumping machinery	2,209,965	2,522,344
Metalworking machinery	2,150,823	1,625,899
Textile machinery	1,415,599	807,566
Other industrial machinery and parts	6,189,185	4,466,763
Total	$14,687,489	$11,820,610

Japan Buys Much Pipe and Tin Plate

New York, Oct. 5.—Considerable business has been placed in this country by Japanese interests. Mitsui & Co. booked 293,000 feet of galvanized gas pipe from the Toho Gas Co., Nagoya. Iwai & Co. booked 12,000 boxes of tin plate for the Kioto Oil Co. and 7000 boxes of tinplate for the Japanese army. Other tin plate orders by Japan aggregated at least an additional 15,000 boxes. Suzuki & Co. booked 140,000 tie plates for the imperial government railways of Japan, all those orders have been placed with American makers. Indications are that 57 miles of 100-pound rails, together with accessories, for the Shinkeihan electric railway has gone to a European maker. The 700 tons of rails for the Tokio subway, recently inquired for, still are pending.

July exports of ship and tank plates, punched and shaped, from the United States included 244,524 pounds to Canada, 244,833 to Mexico, 362,848 to Cuba, 159,607 to Chile and 119,225 to Peru.

Petition For Receivers

An application has been made to the supreme court of Halifax for the appointment of the Eastern Trust Co. and D. H. McDougall as joint receiver-managers of the Nova Scotia Steel & Coal Co. The applications is opposed by the British Empire Steel Corp., of which the Nova Scotia company is one of the component companies. The British Empire Steel Corp. requested the dissolution of an order issued by the court restraining the Nova Scotia Company from disposing of its assets otherwise than in the regular course of business, pending the determination of the application. This was opposed by counsel representing the bond holders who stated that the assets of the Nova Scotia Company have depreciated to the extent of $1,000,000 in the past five years. Judgment was reserved.

To Expand at Birmingham

Birmingham, Ala., Oct. 5.—American Steel & Wire Co. announces proposed enlargement and widening of the scope of its Birmingham sales office, for many years in charge of J. J. Gilmore. The Birmingham office will be headquarters for the territory consisting of Alabama, Mississippi and Louisiana. Mr. Gilmore continues at the head of the office.

Open Pittsburgh Office

Philadelphia, Oct. 5.—Pilling & Co., sellers of pig iron, iron ores, coal and coke have opened a Pittsburgh office, in the Oliver building. George A. Wilson is resident manager.

Pig Iron Sales Larger

(*Concluded from Page* 931)

quotations, for that period. The Cleveland market continues quotable at $19, base, furnace, for local delivery, and $18.25 to $18.50 for outside, while lake furnaces quote $19, base, for delivery in western Ohio and Indiana, and $19.50, base, for delivery in Michigan. A merchant furnace interest that has been quoting $18.50, base, valley, reports several fair size sales at tthat figure; while $18 is the more general price. The Buffalo market is firm at $20, base, furnaces, for local delivery, and $19 for outside competitive points.

Some small sales of low phosphorus iron have been made at $28, valley, an advance of 50 cents. More inquiries are pending.

Cincinnati, Oct. 5.—Alabama and Tennessee pig iron is selling at the reduced price of $20, base, Birmingham. Sufficient business has been forthcoming to keep the northern situation firmly established on a $20, Ironton, basis. A local seller reported the sale of 1000 tons of northern foundry to the O. S. Kelly Co., Springfield, O., while the Columbia Sanitary Co., Louisville, Ky., is reported to have bought 500 tons of the same grade. The Worthington Pump & Machinery Corp. is in the market for 100 tons of northern foundry for its Elmwood, O., plant.

Chicago, Oct. 5.—Fourth quarter contracting of northern pig iron is proceeding steadily, and considerable remains to be placed. Indications are that buying may be augmented later in the quarter by some important fill-in tonnages. Shipments increased in the last month, and September sales totals compare favorably with other months of the past year. Several important inquiries are out for first quarter. Makers of silvery iron have their production schedules filled for the remainder of the year and are preferring to sell only to their regular customers. The silvery price is strong, Northern foundry iron remains steady at $21, Chicago furnace.

Lake Superior charcoal iron has been reduced $2 to $27.04, delivered, Chicago.

St. Louis, Oct. 5.—Pig iron buying continued on a moderate scale. Sales for the week amounted to about 4500 tons, of which 3800 tons was booked by the St. Louis Coke & Iron Corp. Some purchases were made for the first quarter. The melt in this district has been increasing steadily, foundries operating almost on a full-week basis. Stove plants are especially busy, and operations at Belleville have not been halted even by a strike of enamelers there. The principal sale of the week was 1000 tons of foundry iron to a Kansas melter. Other fourth quarter orders included 500 tons for an upper Illinois melter and two local orders for 500 tons each. Prices are steady.

Birmingham, Ala., Oct. 5.—The first week of the general reduction of $1 per ton in pig iron prices in Alabama led to considerable buying. The Sloss-Sheffield Steel & Iron Co. with only four blast furnaces now in operation, and the Woodward Iron Co., with three on foundry and one on basic iron, may find it necessary to increase their make before the expiration of 60 days. Eleven furnaces in this state are on foundry iron, 10 on basic and one on special iron. Three new furnaces are under construction.

Warehouse Buying Eases

(*Concluded from Page* 943)

Warehouses in the argriculture districts are finding an especially good demand for galvanized sheets.

Chicago iron and steel warehouses, whose books for the first half of September showed deficits in several cases, recovered the second half so that the full month was equal to or slightly better than August. October has opened in good shape with all stock products in good demand and prospects indicate the fourth quarter will be as good as that period last year. Main jobbers here have issued a new list of extras on coated wire nails, showing increases for all sizes, gains ranging from 75 cents on 3-penny to 15 cents on 40-penny.

September Iron Output Gains

Both Total of 3,161,604 Gross Tons and Average Daily Rate of 105,386 Tons Are Highest for Any September Since the War—Active Furnaces Increase to 216

THE recession in coke pig iron production which started last May was brought to a halt in September with an increase of over 2000 tons per day over the rate of the preceding month. Likewise, the number of active stacks turned up, although the gain was only one furnace. It is to be noted that the majority of furnaces blown out, were removed because of needed repairs and not for economic reasons.

Production of iron in September amounted to 3,161,604 gross tons, or 39,119 tons less than the 3,200,723 tons of August. September, however, had one less day than August. On an average daily basis, September's output represented 105,386 tons per day, which compared with the 103,249 tons of the month before, was a gain of 2137 tons. Both total output and daily rate were the highest for any September since 1918, a war year, and stand as the third highest for any September in history. In September, 1918, total output was 3,413,223 tons and the daily rate, 113,774 tons per day.

Active furnaces on Sept. 30 totaled 216, against 215 on Aug. 31. With 371 serviceable furnaces in the country, this represented an activity of 58.2 per cent in September against 57.8 per cent a month ago. During the month 1 merchant stack was blown in and 6 blown out or banked; of the nonmerchant class 10 were blown in and 4 blown out.

The number of serviceable stacks in the country was reduced from 372 to 371 by removing from the list Alice furnace of Valley Mould & Iron Co. and Josephine furnace of Corrigan, McKinney Steel Co., both in Pennsylvania, and adding the new Everett furnace of the Mystic Iron Works in Massachusetts.

Stacks blown in during September were: In Ohio: Haselton No. 2, Republic Iron & Steel Co.; one Ohio, Carnegie Steel Co.; Hubbard No. 2, Youngstown Sheet & Tube Co. In Pennsylvania: Cambria H, Bethlehem Steel Co.; Monessen No. 1, Pittsburgh Steel Co. In Maryland: Maryland D, Bethlehem Steel Co. In Alabama: Alabama City, Gulf States Steel Co.; Bessemer No. 4, Tennessee Coal, Iron & Railroad Co. In Colorado: Minnequa, Colorado Fuel & Iron Co. In Illinois: One South Chicago, Wisconsin Steel Co. In Massachusetts: Everett, Mystic Iron Works.

Stacks blown out during the month were: In Ohio: Haselton No. 1, Republic Iron & Steel Co.; Anna, Struthers Furnace Co.; one Buckeye, American Rolling Mill Co.; Belfont, Belfont Steel & Wire Co. In Pennsylvania: Clinton, Clinton Iron & Steel Co. In New York: Port Henry No. 2, Witherbee-Sherman Co. In Maryland: Maryland E, Bethlehem Steel Co. In Alabama: Gadsen No. 9, Sloss-Sheffield Steel & Iron Co.; Woodward No. 3, Woodward Iron Co. In Illinois: Gary No. 10, Illinois Steel Co.

Active Blast Furnaces

	In blast	Total	Per Cent
September	216	371	58.2
August	215	372	57.8
July	217	372	58.4
June	220	372	59.1
May	229	376	60.9
April	237	376	63.0

MONTHLY PRODUCTION

	1926	1925	1924
January	3,319,789	3,372,207	3,015,489
February	2,923,850	3,214,067	3,073,619
March	3,458,171	3,571,422	3,465,389
April	3,438,805	3,211,235	3,226,107
May	3,477,820	2,933,907	2,619,986
June	3,232,478	2,679,045	2,022,836
Total 1st half	19,850,913	18,981,883	17,423,417
July	3,224,663	2,665,262	1,783,457
August	3,200,723	2,707,171	1,882,986
September	3,161,604	2,725,885	2,953,617
October	.....	3,017,889	2,461,727
November	.....	3,023,257	2,154,979
December	.....	3,249,057	2,956,389
Total 2nd half	9,586,990	17,388,521	13,653,155
Grand total	29,437,903	36,370,404	31,076,572

AVERAGE DAILY PRODUCTION

	1926	1925	1924	1923	1922
Jan.	107,089	108,781	97,273	104,136	53,090
Feb.	104,423	114,788	105,987	106,925	58,220
Mar.	111,554	115,207	111,787	113,664	65,674
Apr.	114,627	107,041	107,537	118,210	69,005
May	112,187	94,642	84,515	124,790	74,495
June	107,749	89,301	67,427	122,262	78,748
July	104,021	85,976	57,531	118,860	77,517
Aug.	103,249	87,328	60,741	111,254	58,408
Sept.	105,386	90,862	68,454	103,917	67,466
Oct.	.....	97,351	79,419	101,375	84,827
Nov.	.....	100,775	83,832	96,373	94,870
Dec.	.....	104,808	95,367	93,952	99,468
Ave.	107,437	99,645	84,908	109,659	73,563

DIVISIONS OF PRODUCTION

1925	Merchant	Non-merchant	Spiegel	Ferro-manganese	Other ferro
Jan	659,256	2,712,951	5,418	23,564	956
Feb.	661,415	2,552,652	4,910	19,796	848
Mar.	736,284	2,835,138	5,449	24,422	877
April	689,162	2,522,073	5,341	21,448	799
May	605,347	2,328,560	5,294	22,717	298
June	563,782	2,115,263	4,972	19,834	.....
July	609,741	2,055,521	5,074	16,614	.....
Aug.	588,330	2,118,841	4,940	18,818	.....
Sept.	569,219	2,156,666	5,162	18,381	140
Oct.	606,092	2,411,797	5,071	21,472	1,544
Nov.	638,214	2,385,043	6,370	27,202	1,665
Dec.	664,681	2,584,376	7,746	25,881	1,883
Total	7,591,523	28,778,881	65,747	260,149	9,010
1926					
Jan.	724,946	2,594,843	7,746	32,924	1,607
Feb.	622,121	2,301,729	7,084	22,309	1,464
March	733,321	2,724,850	7,339	24,064	1,942
April	779,310	2,659,495	7,051	24,134	1,593
May	797,539	2,680,281	6,990	22,979	1,704
June	734,823	2,497,655	5,864	25,378	.....
July	758,166	2,466,497	3,699	26,873	.....
Aug.	682,017	2,518,706	4,372	23,557	.....
Sept.	681,377	2,480,227	2,925	25,218	.....

SEPTEMBER PIG IRON

	No. of stacks	No. in blast last day of month Sept.	Aug.	Total tonnage made Merchant	Nonmerchant	—Totals— Sept.	Aug.
Ohio	69	49	50	149,759	652,268	802,027	789,453
Pennsylvania	130	75	74	125,065	943,051	1,068,116	1,062,226
Alabama	34	23	23	111,861	118,326	230,187	238,944
Virginia	17	2	2	6,687	.....	6,687	7,426
New York	26	15	16	97,757	113,109	210,866	196,629
New Jersey	3	0	0	.....	.....	.....	.....
Illinois	25	17	16	94,843	208,970	303,813	317,201
Colorado	5	3	2				
Indiana	18	14	16	43,816	349,175	392,991	439,784
Maryland	6	5	5				
Wisconsin	5	2	2				
Kentucky	5	1	1				
Massachusetts	1	1	0				
Tennessee	13	1	1	10,967	46,406	57,373	59,296
Utah	1	1	1				
West Virginia	4	2	2				
Michigan	4	3	3				
Minnesota	3	2	2	33,361	28,040	61,401	61,835
Missouri	1	0	0				
Texas	1	0	0				
Spiegel and ferro—all states	....	....	....	7,261	20,882	28,143	27,929
Totals	371	216	215	681,377	2,480,227	3,161,604	3,200,723

Imports More Machinery

Washington, Oct. 5.—Imports into Italy of machinery, apparatus, and parts, totaled 69,014 tons during the first six months of 1926, an increase of nearly 32 per cent compared with the 32,400 tons, imported during that period of 1925, according to Henry O. MacLean, commercial attache at Rome.

Detroit Convention Is Most Successful in A. F. A. History

WHEN the gates of the Michigan state fairgrounds at Detroit closed last Friday, the the thirtieth annual convention and exposition of the American Foundrymen's association passed into history as the most successful event ever held by that organization.

The meeting merited this distinction not only because it was larger and was better attended than any previous one, but because it marked the most notable gathering of foundrymen from 12 nations that ever has been held. The international character of the affair was emphasized at practically every technical session and at many points of the program, the cosmopolitan idea was the main theme.

This was true of the opening session of the several foreign language sessions and particularly at the banquet, where H. Cole Estep, Penton Publishing Co., Cleveland, chairman of the committee on international relations, introduced the distinguished guests from abroad who represented various European foundrymen's associations. John Cameron, past president of the Institute of British Foundrymen, and managing director of Cameron & Roberton, Ltd., Kirkintilloch, near Glasgow, responded for the overseas delegates.

L. W. Olson, chairman of the board of medals, then presented the three gold medals. The Joseph S. Seaman medal was presented to Prof. Thomas Turner, Birmingham university, Birmingham, England; the John A. Penton medal was awarded to John Shaw, Brightside Foundry & Engineering Co., Ltd., Sheffield, England; and the J. H. Whiting medal to E. V. Ronceray, president and managing director Etablissements Bonvillain et Ronceray, Choisly-le-Roi, near Paris, France.

The principal address of the evening was delivered by Charles F. Kettering, noted American inventor and scientist, president of the Dayton Engineering Laboratories Co., vice president the Dayton-Wright Airplane Co., an an officer in a number of industrial and financial institutions of Dayton, O.

Growth of the association during the 30 years of existence and the work of the various departments during the past year were traced by President Root in his address at the business meeting on Thursday afternoon. Mr. Root told briefly of the work of the committees and joint committees in solving some of the problems of the industry, and also noted the large increase in the number of exchange papers with European associations this year. C. E. Hoyt's report as secretary appears elsewhere in this issue.

Dean C. B. Connelley, Carnegie Institute of Technology, Pittsburgh, reported on the Obermayer prize award. Four entries were received and the prize was awarded to Redfield H. Allen, East Cambridge, Mass. B. D. Fuller, Whitehead Bros. Co., Cleveland, reported on the molding contest conducted by the committee on apprenticeship training.

Dan M. Avey, editor *The Foundry*, Cleveland, chairman of the joint committee on pattern standardization, reported on the activities of that committee. He also read a number of proposed standards governing certain phases of patternmaking, which were recommended to the board of directors by the meeting. President Root placed a resolution before the meeting favoring the placing the weights of castings on blueprints. This resolution was adopted.

Secretary Hoyt then explained the action of the board of directors at the meeting Sunday evening, Sept. 26, following the annual alumi dinner in changing the time of the annual meeting of the association. The next annual meeting of the association will be held in the spring of 1927 without an exhibit while the thirty-second annual convention will be held in the spring of 1928 with an exhibition. The committee on conventions and exhibits will select the location of the 1927 and 1928 meetings and will report at the annual meeting of the board of directors which must be held within 30 days after the close of the convention.

Upon the motion of R. A. Bull, Steel Founders Research group, Chicago, Retiring President A. B. Root Jr. was elected to honorary membership in the association.

Dr. Ing Geilenkirchen, managing director Verein Deutscher Eisengiesserein, stated that the German Foundrymen's association is planning the third international congress in Dusseldorf in 1929, and extended an invitation to the American Foundrymen's association to be represented at that meeting. President Root replied that the invitation of the German association would be referred to the committee on international relations for action.

Foreign Visitors Show Interest in Technical Sessions

SEVERAL hundred members of the American Foundrymen's association and visitors, gathered Monday under the flags of many nations at the east end of the colliseum to welcome the delegates from European associations to the second International Foundrymen's congress and the thi-tieth convention and exhibition of the American Foundrymen's association.

A. B. Root Jr., president of the American Foundrymen's association officially welcomed the delegates, after speaking of the exceptionally cordial reception of American Foundrymen when they visited several European countries and attended the International Foundrymen's congress at Paris in 1923. He then presented Robert Crawford, president of the Detroit Foundrymen's association, who extended Detroit's hospitality and expressed the hope that their stay in the convention city will be filled with happy memories.

Harvey J. Campbell, vice president

of the Detroit board of Commerce, was introduced as a representative of the Governor o fthe State of Michigan. In welcoming the delegates and visitors to the convention, he stated that the City of Detroit is a monument to the work and progress that has been made by the foundrymen of this country and of the world, since the progress in the manufacture of automobiles has been dependent on the increase in knowledge of foundry practice.

After the remarks of the various speakers had been presented in French and German by the official interpreter, President Root introduced the official representatives of the associations of other countries.

Two other sessions for foreign visitors were held. On Tuesday Robert Ronceray, Saginaw Products Co., Saginaw, Mich., presided over the foreign language session, at which the papers and discussion were presented in French. C. H. Gale, Detroit, presented a paper entitled "Early French History of Detroit." After this paper the meeting took the form of a round table discussion and several important problems were discussed including the relative value of cast iron and aluminum automobile pistons, the use of the electric furnace in a malleable iron foundry and the practice of blowing cores. E. V. Ronceray, managing director Etablissements Bonvillain et Ronceray, rue Paul-Carle, Choisy-le-Roi, near Paris; and H. Saint-Clivier, manager of Acieries de Firminy, Firminy, Loire, took prominent parts in the discussion.

German Language Session

The German language session held Wednesday afternoon attracted more than 50 of the German, Austrian and Dutch founders and interested Americans. Dr. Richard Moldenke, Watchung, N. J., presided, assisted by Dr. Ing Geilenkirchen, Verein Deutscher Eisengiesserein, the employers organization of Germany and Dr. L. Zerzog, Verein Deutscher Giessereifachleute, the technical society devoted to foundry matters. The latter gentlemen complimented Dr. Moldenke for his services in promoting this international exchange of ideas. Ing. C. Irresberger, Salzburg, raised the question of whether the American practice, particularly as followed with large cupolas did not produce an iron which was too hot. Dr. Moldenke impressed the fact that many classes of work, notably radiator work required this condition. He stated that better quality of coke is obtained in this country and that the coke ratio of 1 to 5 or 6 as against 1 to 10 or 11 in Germany shows that in this country coke is sacrificed in the interest of iron quality.

In response to a question, Dr. Moldenke stated that two types of coke, designed to influence the pick-up of carbon in the cupola are not used, and that coke producers do not make a study to provide certain grades of coke to meet foundry requirements. Dir. Dr. Greiner, Machinenfabrik Esslingen, Esslingen-Neckar told of the use of briquettes of ferrosilicon designed to retain their solidity until they reached the melting zone of the cupola and avoid losses.

Two exchange papers presented at the gray iron testing session of the convention of the American Foundrymen's association aroused considerable discussion among the metallurgists and many other foundrymen interested in the metallurgy of cast iron and closely related phases of the subject. The first paper "Testing Cast Iron" by A. E. Le Thomas prepared at the instigation of the Association Technique de Fonderie de France was presented by E. V. Ronceray. The Institute of British Foundrymen's paper, "Some Gray Iron Problems" prepared by John Shaw, foundry manager Brightside Engineering & Foundry Co., Sheffield, England, was read by the author.

Out of respect for the late G. K. Elliott who died a few days before the convention opened, his paper "A Shearing Test for Cast Iron" was read in full by J. W. Bolton, Frank Foundries Corp., Moline, Ill. On motion of E. J. Lowry the paper was accepted without discussion. "Strength of Cast Iron in Its Relation to Thickness" was the subject of a paper prepared by W. H. Rother and V. M. Mazurie, Buffalo Foundry & Machine Co., Buffalo.

Discuss Cupola Practice

Gray iron foundrymen to the number of nearly 400 evinced the keenest interest in the four papers presented at the meeting under the chairmanship of J. W. Bolton, Frank Foundries Corp., Moline, Ill.

Interesting detail of a European experience in melting all steel charges supplemented by proper additions of ferrosilicon and ferromanganese for the production of high grade gray iron castings was presented by Frank Hudson, assistant superintendent Wyoming Shovel Works, Wyoming, Pa., to confirm the views of T. F. Jennings, Utah Copper Co., Garfield, Utah, expressed in his paper "Melting All Steel Charges in the Cupola."

J. T. Longdon, Hetherinton & Co., Manchester, England, ventured the assertion that if Mr. Jennings had substituted silica sand for limestone he would not have been troubled with foaming slag in his early trials.

David McLain, Milwaukee, pointed to the fact that the total carbon in the castings made in this manner approximated 2.30 per cent and clearly proved that steel melted in the cupola absorbs carbon.

Interesting discussion on many related features was precipitated by the paper on cupola melting presented by R. E. Wendt and J. P. Walsted, Purdue university, Lafayette, Ind. The Belgian exchange paper "Chaplet in Heavy Iron Castings" was read in abstract by J. T. McKenzie, American Cast Iron Pipe Co., Birmingham, Ala., in the absence of the author Ivan Lamoreux. H. W. Dietet, United States Radiator Corp., Detroit, presented a paper on a method of calculating gates for castings.

New Officers of A. F. A.

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President, W. W. Sly Mfg. Co., Cleveland

L. C. WILSON,
Vice President, Federal Malleable Co., Milwaukee

Membership of A. F. A. Now Exceeds 2100

IN MAKING the report of the secretary, C. E. Hoyt stated that on Jan. 1 the total membership of the association was 1754, and that between that time and the opening of the convention 450 new members had been secured and 50 lost, making a total membership on Sept. 27 of 2154. On Thursday noon the registration was 5100, considerably in excess of the previous high mark of 4420 in Milwaukee in 1924. This figure does not include the ladies' registration of 469. Approximately 135 visitors from overseas were registered. Mr. Hoyt also gave some statistics on the exhibition of foundry equipment, which he stated, was the largest in both floor space used and number of exhibits in the history of the association.

Of the five papers presented under the chairmanship of H. Cole Estep, Penton Publishing Co., Cleveland, at the session on cast iron Thursday, two were prepared by foreign foundrymen. One was the French exchange paper prepared by A. Portevin and P. Chevenard and was presented in abstract by E. V. Ronceray. The other was prepared by Dr. E. Piworasky, technical high school, Aachen, Germany on invitation of the Verein Deutscher Eisengiessereien. The first paper dealt with the dilatometric analysis of iron, a method it is claimed is practiced to a considerable extent abroad, but not yet introduced into the United States. The second paper described a new type of melting furnace which combines some of the features of a cupola, an open hearth and a reverberatory furnace in which the iron can be melted at a temperature of 2900 degrees Fahr.

A free translation of a German extract of the second paper prepared by the author was presented, with interesting digressions, by Dr. Moldenke, Watchung, N. J. The paper was based on the premise that when molten iron is heated to a temperature well above the ordinary melting range, all impurities are driven off and the other elements, particularly the carbon, are afforded an opportunity to rearrange themselves to produce

Oliver Smalley, New York, presented a paper on heat resistant cast iron in which he described methods and charges employed to produce an iron with a tensile strength of 70,000 pounds per square inch and with a transverse breaking strength of 6500 pounds.

J. T. McKenzie read a paper on the effect of phosphorus in cast iron with particular reference to pipe castings. In the discussion which followed, E. V. Ronceray, Paris, France, stated that satisfactory pipes are made in France with a phosphorus content up to 1.50 per cent. Effect of various alloys on the growth of cast iron under repeated heatings and coolings was the subject of a paper by R. R. Kennedy and G. J. Oswald, National Cash Register Co., Dayton. O.

Instructors Exchange Ideas on Foundry Courses

INSTRUCTORS in foundry theory and practice in nine colleges, universities and technical schools met Tuesday evening in a foundry instructors' dinner at the Book-Cadillac hotel, where they discussed with several practical foundrymen the betterment of foundry shop courses of instruction. O. W. Boston, University of Michigan, Ann Arbor, Mich., presided over the session.

Four papers were read following the dinner: "Training for Foundry Executives," by William H. Dosey, college of industries, Carnegie Institute of Technology, Pittsburgh; "Foundry Instruction at Purdue University," R. E. Wendt, foundry instructor, Purdue university, Lafayette, Ind.; "A Course on Cast Metal," by H. L. Campbell, assistant professor of metallurgical engineering, University of Michigan, Ann Arbor, Mich.; and "Foundry Instruction at the University of Illinois," by Henry O. Haughton, Studebaker Corp., South Bend, Ind., formerly superintendent of foundry laboratory, University of Illinois, Urbana, Ill.

Extended discussion followed the reading of these papers. R. E. Kennedy, assistant secretary, American Foundrymen's association, Urbana, Ill., declared that for the cost of shop work to be justified by its practical engineering value, more effort should be placed on shop work by working out a laboratory scheme to give information on the differences in casting metals. Mr. Haughton's paper aroused considerable comment as to the methods used in producing the engine castings.

RESUMES of sessions on materials handling, cost accounting and cores and core binders will be published in next week's issue.

Dean C. B. Connelley, Carnegie Institute of Technology, Pittsburgh, declared that engineering itself is under fire, and told of a recent research fund of over $100,000 set up to determine just what kind of training an engineer should have.

Adopt a system of training that will make the apprentice an economical asset rather than an economical liability is the basis of any plan that has any chance of being approved by owners and directors of plants where apprentices are required, according to J. C. Wright, federal director of vocational training, in opening the session devoted to this subject. In a general review of the situation he deplored the fact that boys consciously or unconsciously are prevented from entering the ranks of industry on account of mistaken views held by the parents and teachers regarding the dignity of honest labor.

Others who participated in the discussion included L. S. Harding, in charge of activities of the Associated Industries of Massachusetts; George Hayes, vocational school director, Harvey, Ill.; C. J. Freund, apprentice superintendent, Falk Corp., Milwaukee; John Plohen, general superintendent, French & Hecht, Davenport, Iowa; and Paul M. Ramp, foundry manager Newport News Shipbuilding & Drydock Co., Newport News, Va.

Reports Show Progress in Sand Investigations

INDICATIVE of the almost limitless field which still remains to be cultivated, the reports submitted at the Thursday sand control session simply reported progress and on motion were accepted and referred to the incoming board of directors. W. M. Saunders, Franklin & Saunders, Providence, R. I., chairman, presented the report of the American Foundrymen's association committee on the joint committee on molding sand research. The report of the subcommittee on tests was read by Dr. H. Ries, Cornell university, Ithaca, N. Y. R. H. Harrington, Hunt-Spiller Corp., Boston, presented the report of the committee on reclamation. A report on a number of experiments designed to show the fusing points of various sands and an analysis of the factors which effect the fusing point was read by Howells Frechette. Mr. Frechette is associated with the Canadian department of mines located at Ottawa, Ont.

Following his report Mr. Saunders suggested appropriate steps should be taken to interest a prominent foundry or a group of foundries in the establishment of a fellowship in some well equipped school for carrying on the work.

Some practical and technical data obtained from the use of clay additions to molding sand heaps gave R.

F. Harrington an opportunity to describe the character of the work he and associates have been carrying on for several years. Some of the practical difficulties which confront foundrymen in the reclamation problem were aired in an animated discussion which followed the presentation of the paper.

Paul Ramp, foundry manager, Newport News Shipbuilding & Dry Dock, Co., Newport News, Va., injected a little humor into the discussion when he stated that his father once had told him that when he needed sand he should buy it and not attempt to make it.

At the Friday morning session, John Howe Hall, Taylor-Wharton Iron & Steel Co., High Bridge, N. J., deprecated the tendency of authors to use unnecessarily ponderous language where simple words and shop terms are available. He claimed that while certain technical terms have been coined, terms that express the author's meaning clearly to other men who have had a similar scholastic training, still this number relatively is small.

Chairman R. A. Bull heartily concurred with the views of Mr. Hall and then unconciously raised a gale of laughter when he stated in all seriousness that after all the only purpose of sand mixing apparatus is to incorporate the various ingredients thoroughly to produce a homogenous mass of material of the proper consistency, permeability and other related features suitable for the character of the castings.

A. V. Leum, Cornell university, Ithaca, N. Y., presented an illustrated paper describing the effect of mulling time on some of the properties of sand. Commencing with a period of 10 minutes he showed the results in a graduated scale up to and including a period of 120 minutes. In the discussion which followed several speakers admitted the tests had a certain academic interest, but had no application commercially. C. A. Hansen, General Electric Co., Schenectady, N. Y. claimed that the moisture content of No. 0 Albany sand, 8 per cent, rendered the sand unfit for foundry use. R. F. Harrington, Hunt-Spiller Corp., Boston, stated that under modern production methods it was useless to consider leaving the sand in the muller for such a long period as 120 minutes. E. S. Carman, Osborn Mfg. Co., Cleveland, suggested that the adoption of a machine in which an ordinary long mulling time could be concentrated in a few minutes seemed to offer a solution to the problem.

L. B. Thomas, Fairbanks-Morse Co., Three Rivers, Mich., presented a paper describing the methods adopted in his plant for the selection of sand and its subsequent control while in use. Grading Molding Sands, was the subject of a paper read by C. A. Hansen, General Electric Co., Schenectady, N. Y. Mr. Hansen explained that the paper primarily was prepared as a contribution to the deliberations of the subcommittee of tests of the joint committe on molding sand research.

Foundrymen Discuss Miscellaneous Topics

ABOUT 200 attended the symposium on permanent and long life molds presided over by J. L. Jones, Westinghouse & Electric Mfg. Co., East Pittsburgh, Pa. Dr. Richard Moldenke, Watchung, N. J., summarized the position of these types of molds in the foundry industry, suggested some possible mold materials and then outlined mold maexperimental work. A description of the semipermanent or durable mold was given by James A. Murphy, Hamilton, O. One mold used in making an eight-ton casting for glass making has been in use for 18 years and over 1000 castings produced from it. Centrifugal pipe casting as practiced in European countries was described in a paper by J. E. Hurst, Kilmarock, Scotland, which was abstracted by John Cameron, past president of the Institute of British Foundrymen. H. A. Schwartz, American Foundry Equipment Co., Cleveland, read a paper on oil cooled cast iron permanent molds. The results obtained in practice and the application of the molds also were given. Investigations on a suitable medium for the construction of permanent molds for the casting of steel pipe and other products cast at high temperatures were described by Leon Cammen, American Society of Mechanical Engineers, New York. R. Hara, Mitsubishi Denki Kaisha Ltd., Kobe, Japan, remarked that permanent molds of cast iron, bronze and stone were in use in Japan for casting small objects such as spoons, etc. Metal for heavy iron castings in permanent molds was the topic of an illustrated paper read by S. M. Udale, Holley Carburetor Co., Detroit. H. P. Kimber was joint author of the paper. Mr. Winship, Thermal Syndicate Co., New York, suggested the use of fused silica for a refractory material for lining molds because of its low coefficient of thermal expansion. Gelatinous precipitated silica was recommended as a binder and the mold and lining to be heated to a temperature considerably above that at which the casting is to be carried on to eliminate any water that may be present.

Consider Waste Elimination

Immediately following the business session, Thursday, Dean C. B. Connelley called the waste elimination meeting to order and outlined the work which Herbert Hoover, secretary of commerce, is doing to lessen the losses to industry through the existence of too many types and sizes of various commodities. A. B. Root Jr., told of the work of two committees organized by the department of commerce. The first of these is working to establish the practice of putting weights of castings on all blueprints. The second, dealing with questions of metals utilization, is getting under way. S. W. Utley, Detroit Steel Castings Co., Detroit, elaborated Mr. Root's explanation of the work of the latter committee. He told of the preliminary investigation on shovels, which showed a total of 1100 types and sizes of shovels at present manufactured. He explained Mr. Hoover's attitude wherein he holds that simplification is a problem affecting most vitally the manufacturer and the consumer, and as such should be settled between them.

D. M. Avey, *The Foundry*, Cleveland, gave a short review of the work and aims of the joint committee on pattern standardization. H. Y. Carson, American Cast Iron Pipe Co., Birmingham, Ala., told of the soil corrosion investigation of the committee which he heads. After four years, 46 specimens of cast iron, steel and malleable iron pipe buried in various parts of the country under different soil conditions, have been inspected and only four types of soil have had any marked effect upon these various test pipes.

Survey Refractory Needs

In opening the meeting of the joint committee on foundry refractories, L. C. Hewitt, chairman, stated that the reason for a joint committee was to avoid duplication of efforts and determine the best refractories for each purpose. C. N. Ring, Electric Steel Founders' Research

group, Chicago, read the report of the committee on steel, foundry refractories. The report showed that acid and basic materials undergo the same conditions except for chemical requirements. That the brick have to withstand a temperature of 1750 degrees Cent., and to obtain the best results from refractories, the furnace operators should be more careful and the furnace be designed properly. J. R. Allan, International Harvester Co., Chicago, spoke on the work accomplished by the committee on malleable refractories. Standard sizes of taphole brick and bung brick were recommended. Returns from a questionnaire indicated considerable saving in refractories per ton of metal melted when powdered fuel was used.

Standardization and determination of the best type of refractories for nonferrous foundry purposes involves considerable work according to H. M. St. John, Detroit Lubricator Co., Detroit. Over 27 different kinds of furnaces of varying sizes are in use in the industry. Also there is a wide variation in operation and practice. The committee hopes eventually to have all practices and methods of operation standardized.

A questionnaire is being prepared to be sent to the gray iron foundries to assist the committee according to James T. MacKenzie, United States Cast Iron Pipe Co., Birmingham, Ala., chairman. This questionnaire will enable the committee to determine the requirements of the gray iron foundries for refractory materials and the conditions encountered.

Steel Founders Discuss Metallurgy and Practice

STEEL foundry problems were considered at two sessions. The first, held Tuesday morning, was attended by 75 foundrymen. R. A. Munson, Atlantic Steel Castings Co., Chester, Pa., read a paper on defects in steel castings in the foundry and placed the causes to the three main heads of design of pattern equipment, molding and coreshop methods and melting and pouring conditions. J. M. Sampson, General Electric Co., Schenectady, N. Y., had a similar paper referring to the defects in steel castings discovered after shipment from the foundry. He made an analysis of the conditions in the steel foundry, particularly of the rejections and salvaging work in machine shops. These papers were discussed jointly. Mr. Young, Detroit Steel Casting Co., Detroit, Mich., asked if trouble occurred from rust on using horseshoe nails for internal chills. John Howe Hall stated that the use of horseshoe nails generally caused blowholes and that external chills should be used in preference. Mr. Garrison, Riverside Steel Casting Co., Newark, N. J. stated that when horseshoe nails were used for preventing internal shrinkage, leakage occurred when pressure was used on the castings. Leon Cammen, American Society of Mechanical Engineers, New York, said that in his opinion much of the trouble occurs because the steel foundries do not insist on the making of the patterns themselves but allow customers who do not understand foundry detail to make them.

R. A. Bull, Electric Steel Founders Research group, Chicago, read a paper commenting on past developments, present tendencies and future possibilities in American steel foundries. This paper covered pioneering in the industry and the progress made. He declared future development of the industry will be related to the investigation of manufacturing distribution and performances. Ancel St. John, New York, gave some examples of the use of X-ray examination in discovering defects in small castings.

Metallurgy was the topic at the Tuesday session under the direction of A. H. Jameson, Deemer Steel Casting Co., New Castle, Del., chairman, C. M. Campbell, West Steel Casting Co., Cleveland presented a paper on physical properties and compositions of cast converter steel. John Blair, Industrial works, Bay City, Mich., inquired the method of introducing ferromanganese and stated that his foundry experienced an occasional off-heat. This trouble was attributed to not using a uniform size of the alloy by R. A. Bull, Electric Steel Founders' Research group, Chicago. Ralph West, West Steel Casting Co., stated that in his opinion, the success obtained in his plant was due to the rapidity in whch the operations were performed. The slags were kept thin so that when wet ferromanganese was added it entered the bath properly. W. B. Coleman, W. B. Coleman & Co., Philadelphia, asked about the quantity of silicon used. Mr. Campbell replied that the recovery of silicon was approximately that added and that in case of high silicon iron with a short hard blow, the tendency of the oxygen was to unite with the carbon and leave the heat wet or high in silicon.

Open hearth slags was the subject of a paper by W. C. Hamilton, American Steel Foundries, East Chicago, Ind., in which he stated that he found no difference in the iron oxide content of a black slag and a light colored one. Mr. Coleman said that he had used gravel-sized ferromanganese in trying to clear up a black slag without any results. The final paper was that of John Howe Hall, Taylor-Wharton Iron & Steel Co., High Bridge, N. J., in which he described some tests that were carried out on manganese steels with 1 to 2 per cent manganese.

Malleable Iron Producers Look To Specifications

SEVERAL questions of unusual significance to producers and users of malleable cast iron were discussed at the Wednesday morning malleable session, at which L. C. Wilson, Federal Malleable Co., West Allis, Wis., presided. They were introduced by H. A. Schwartz, National Malleable & Steel Castings Co., Cleveland, in a paper entitled "What May Be Required of Malleable Cast Iron," which is presented elsewhere in this issue.

Mr. Schwartz declared that yield point determinations for malleable fluctuate widely and cited instances of variations. Enrique Touceda, Albany, N. Y., disagreed with this, stating that in his experience determinations by the dividor and drop-of-beam methods both had proved satisfactory. W. R. Bean, Eastern Malleable Iron Co., Naugatuck, Conn., agreed that a more definitely determined yield point is desirable, but suggested that much of the present difficulty could be avoided if the method of determination were prescribed in the specifications. After prolonged discussion, Mr. Schwartz moved that the question of a more accurate means of ascertaining the yield point be re-

(*Continued on Page* 963)

European Steel Prices Rising

Influence of New Cartel and Increasing Demands Felt in England—Large Engineering Works Suspends Until Fuel Situation Improves—Miners Making District Settlements

2-3 Caxton House, Westminster, S. W.1
European Headquarters,
IRON TRADE REVIEW,

LONDON, Oct. 5.—(*By Radio*)—General resumption of British coal mining is expected to result from district settlements that are now being negotiated. About 150,000 miners are working, but this number is not nearly enough to supply requirements that are developing with the approach of colder weather. Domestic, institutional and food production needs are being given first preference.

A famine in coke and pig iron is inevitable, unless relief comes soon, and will cause a far more serious interruption to manufacturing enterprises. Hadfields Ltd., among the largest engineering firms, has announced suspension of operations until the situation is improved.

Order books for iron and steel are well filled. Continental prices are rising, due to increasing demands and the operation of the European steel cartel. Orders are placed with difficulty, especially those for semifinished steel. British prices are expected to rise further. Demand for galvanized sheets and tin plate is improving.

German interests report satisfactory export business at higher prices. Polish mills have booked 15,000 tons of steel bars for South America. The DeWendel mills in France have obtained an order for 9000 tons of rails for Japan. French and Belgian export prices are firm, and some of the Belgian mills are refusing business. Buyers are placing orders in Germany at lower prices.

British Iron, Steel Industry Is Still Prostrate

Office of IRON TRADE REVIEW.
Prince's Chambers, Corporation St.

BIRMINGHAM, Eng., Sept. 24—(*European Staff Service*)—The iron and steel position has not materially changed. The production figures issued this week reflect the severe blow administered to the iron and steel trade by the continuance of the coal dispute. Only six furnaces were in blast during August, compared with 147 before the strike. Production of pig iron was 13,600 tons, compared with 17,900 in July and 539,100 in April. However, the British Board of Trade's return shows a marked increase in imports of iron and steel commodities. This indicates that customers who are not able to

Sterling $4.85

rely on usual British sources of supply are buying abroad. Production of steel ingots and castings was 52,100 tons in August, compared with 32,100 tons in July and 661,000 tons in April.

Most of the pig iron available is coming from the north of England and Cleveland makers are quoting £4 12s ($22.30) for No. 3 foundry. Pressure for supplies is heavy and in excess of production, with the result that prices are firm and inclined to move up still further. Any coke available is costing £3 10s ($16.94), whether of British make or Westphalian and smelters state that they are compelled to increase their prices because of the dearer fuel and not because they are taking advantage of the position. Some inquiries are circulating for delivery when the strike is over, but makers are not inclined for forward business until the price question is likely to settle down. The export trade of Cleveland iron is quiet but an extra 6d ($0.12) per ton is asked for shipment.

In the steel trade substantial orders are held at Barrow which will keep the works actively engaged for some months, but fresh inquiry for steel is not much in evidence. A few steel mills are working on special orders at Middleborough, but high prices are

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, Oct. 4	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON		£ s d		£ s d		£ s d		£ s d
Foundry No. 3, Silicon 2.50-3.00	$26.07	5 7 6*	$17.70	3 13 0	$17.70	3 13 0	$17.46	3 12 0
Basic	23.04	4 15 0	18.79	3 17 6	18.79	3 17 6	16.98	3 10 0
Basic-bessemer	23.64	4 17 6†	16.49	3 8 0	16.49	3 8 0	18.19	3 15 0
Hematite, Phosphorus 0.02-0.05	20.49	4 4 6	20.66	730*	.....	.....	20.61	4 5 0
SEMIFINISHED STEEL								
Billets	$30.31	6 5 0	$24.74	5 2 0	$24.74	5 2 0	$20.86	4 6 0
Wire rods	43.65	9 0 0	27.89	5 15 0	27.89	5 15 0	29.10	6 0 0
FINISHED STEEL								
Standard rails	$37.49	7 15 0	$29.10	6 0 0	$29.10	6 0 0	$29.10	6 0 0
Merchant bars	1.73c	8 0 0	1.21c	5 10 0	1.21c	5 10 0	1.16c	5 5 0
Structural shapes	1.46c	6 15 0	1.17c	5 6 0	1.17c	5 6 0	1.10c	5 0 0
Plates, ship, bridge and tank	1.62c	7 10 0	1.38c	6 5 0	1.38c	6 5 0	1.23c	5 12 0
Sheets, black, 24 gage	2.38c	11 0 0	2.53c	11 10 0	2.48c	11 5 0	2.48c	11 5 0
Sheets, galvanized, 24 gage, corrugated	3.63c	16 15 0	3.64c	2,800*	4.62c	3,850*	3.63c	16 10 0
Bands and strips	2.17c	10 0 0	1.43c	6 10 0	1.43c	6 10 0	1.49c	6 15 0
Plain wire, base	2.11c	9 15 0	1.46c	6 12 6	1.32c	6 0 0	1.43c	6 10 0
Galvanized wire, base	2.76c	12 15 0	2.15c	9 15 0	1.76c	8 0 0	1.90c	8 13 0
Wire nails, base	2.07c	9 10 0	1.93c	8 15 0	1.57c	7 2 6	1.64c	7 9 0
Tin plate, base box 108 pounds	$ 9.09	1 17 6	.....	.....	.....	.....	$ 6.79	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$22.67	4 13 6	$16.98	600(2)	$16.59	610	$19.55	85
Basic pig iron	21.83	4 10 0	16.70	590(1)	16.46	605	20.24	88
Furnace coke	7.28	1 10 0	5.49	194	5.85	215	4.95	21.50
Billets	30.31	6 5 0	21.37	755	21.35	785	27.37	119
Standard rails	1.79c	8 5 0	1.17c	900	1.20c	1,000	1.46c	140
Merchant bars	1.73c	8 0 0	1.27c	975	1.16c	970	1.40c	134
Shapes	1.62c	7 10 0	1.20c	925	1.12c	930	1.37c	131
Plates, ship, bridge and tank	1.84c	8 10 0	1.37c	1,050	1.41c	1,175	1.55c	149
Sheets, black, 24 gage	2.38c	11 0 0	2.47c	1,900	2.22c	1,850	2.14c	205
Sheets, galvanized 24 gage, corrugated	3.57c	16 10 0	3.58c	2,750	3.72c	3,100	3.96c	380
Plain wire	2.76c	12 15 0	1.82c	1,400	1.68c	1,400	1.88c	180
Bands and Strips	2.27c	10 10 0	1.50c	1,150	1.44c	1,200	1.62c	155

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £1 10s 0d ($7.28) f. o. b. Ferromanganese £14 0s 0d ($64.90) f. o. b. German ferromanganese £13 0s 0d ($63.05) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxembur; and German are for basic-bessemer steel.

Machinery

September Business Tapers Down at Close of Month—Inquiries Appear Good—Railroads Not Active—Crane Market Slack.

BUSINESS during the latter part of September showed a let-down from the pace which was maintained through most of the month. Dealers and manufacturers seem to have sufficient inquiries, but sales are slow and difficult to close up. In the New England territory, October has opened up with demand high. With good fall activity in prospect, there is no reason to feel that the recent quietness is anything more than a passing turn of the market. Illinois Steel Co. is expected to take action this week on its list of 40 miscellaneous tools for Gary, Ind. Not a great deal of railroad buying is being done, although the New York Central continues to buy, placing nine machines during the week. Crane buying is slack, and inquiries are light.

New York, Oct. 5.—Machine tool buying again is spotty, with fresh inquiry limited. Sellers appear hopeful that trading this month will show an improvement over September, which was more or less of a disappointment to the trade generally, but find it a little early for developments which would indicate a definite trend. New York Central continues to bring out inquiries, the more recent calling for four 20-inch engine lathes, two 4-foot radial drills, one 24-inch upright drill, one 34-inch shaper and one 24-inch turret lathe. Westinghouse Electric & Mfg. Co., Pittsburgh, has closed on a boring mill, Missouri Pacific, a boring mill, a 1500-pound steam hammer and three 100-ton bushing presses, and the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y., on an 8-foot plate bending roll, all going to the Niles-Bement-Pond Co.

Boston, Oct. 5.—Inquiry for machine tools throughout New England holds at a higher level than at any time in several months, but actual sales are comparatively slow in developing. Textile machinery manufacturers are all enjoying better production and several are in the market for tools. Miscellaneous machine shops and small manufacturers throughout the district are inquiring for one or two or more tools apeice. A movement seems to be underway to bring equipment up to date, and tool manufacturers expect good business through the fall. Buying of used tools from dealers is slack due to a large number of auction sales during September. Prices of tools are unchanged but firm. Demand for electric motors for industrial purposes is in better volume than heretofore this year.

Pittsburgh, Oct. 5.—October is opening up well from a machine tool inquiring standpoint, many manufacturers wishing to bring their equipment up to its highest state of efficiency by the addition of a few items. On the part of a number of sellers, September turned out to be a better selling month than August, made up for the most part of sales of one or two machines at a time. While most inquiries pending are of that nature, a few lists also are active including the recently augmented large inquiry of Westinghouse Electric & Mfg. Co., action on which has been deferred for two weeks, while tabulations are made, and those of Carnegie Steel Co. This interest too, has a large number of cranes pending and has placed several crane orders this week. Quite a number of machinery inquiries coming to light here were developed at the recent machine tool exhibit at Chicago.

Cleveland, Oct. 5.—Regardless of the fact that business in this territory has eased off during the last ten days, there is no cause for alarm. Manufacturers are planning ahead for their fall outputs and buying equipment as demand necessitates. As a result sales are small, unusually for one or two tools, and are made spasmodically. A Cleveland automobile manufacturer has purchased 10 milling machines and a boring mill, the business going to local dealers.

Chicago, Oct. 5.—September closed with a decided let-down in buying in this territory and thus far has not yet improved greatly. Dealers locally have made a number of individual sales, they find in checking up, as a result of the recent machine tool exposition and expect October to turn up more business. No new inquries have appeared and buying against the best ones outstanding still is in abeyance. However, Illinois Steel Co. is expected to make overtures on its list of some 40 tools for the Gary plant before another week has elapsed. Pullman Car & Mfg. Co. lot also is drawing to a head. One or two railroads have inquired for a few tools, Illinois Central placing several orders for duplicate machines in rounding out the Paducah, Ky., shop installation. International Harvester Co. also has shown some activity for outlying plants, but this is not extensive. Used tools continue at a fair pace, with machine tool prices steady.

CRANE ORDERS PLACED

Four electric overhead cranes, including one 20-ton and three 10-ton cranes for Billerica, Mass., shops for Boston & Maine; reported last week as going to unnamed builder, went to Shaw Crane Works.

Three 1-ton jib cranes for Coney Island & Brooklyn Railway Co., Brooklyn, N. Y.; to New Jersey Foundry & Machine Co.

Three 15-ton cranes for a New York state manufacturer, to Northern Engineering Works, Detroit.

Two 22-ton standard bucket cranes for Illinois Central railroad, Gulfport, Miss., to Orton Crane & Shovel Co.

Among single awards were: 15-ton electric crane for E. W. Bliss Co., Brooklyn, N. Y., to Shepard Electric Crane & Hoist Co.; one cantilever gantry crane for P. Gresser Monumental Works, Staten Island, New York, to New Jersey Foundry & Machine Co.; monorail track with motor-driven trolley for Corn Products Refining Co., Edgewater, N. J., to New Jersey Foundry & Machine Co.; crawler crane for American Forest Products Co., reported placed with Industrial Works; 30-ton locomotive crane equipped with pile driver leads for Raymond Concrete Pile Co., New York, for operation at Buffalo, to McMyler-Interstate Co.; 25-ton locomotive crane equipped with shovel and pile driver for Yosemite Valley railroad, Merced, Calif., to American Hoist & Derrick Co.; 25-ton electrically-operated crawler crane for Trinidad-Portland Cement Co., Dallas, Tex., to American Hoist & Derrick Co.; 30-ton locomotive crane for Consolidated Wood Pulp & Paper Co., a Wisconsin company, to American Hoist & Derrick Co.; 10-ton crawler crane for New York Central, to Northwest Engineering Co., erroneously reported last week as going to another builder; 37½-ton crane with 15-ton auxiliary for Carnegie Steel Co., Edgar Thomson Works, to Alliance Machine Co.; 5-ton special crane for Carnegie Steel Co., Duquesne Works, to Morgan Engineering Co.; 25-ton crane for Carnegie Steel Co., Clairton, Pa., to Cleveland Crane & Engineering Works; 22-ton steam locomotive crane for Union Tank Car Co., Whiting, Ind., to Orton Crane & Shovel Co.; 12-ton gasoline crawler crane for Buffalo Sand Co., Buffalo, to Orton Crane & Shovel Co.; 5-ton low-head handpower hoist for Hammond Foundry Co., Hammond, Ind., to H. D. Conkey & Co., through Page & Ludwick, Chicago; 1-ton handpower crane for International Harvester Co., Moline, Ill., to H. D. Conkey & Co., through Page & Ludwick, Chicago; 20-ton electric overhead crane for American Steel Foundries, Chicago, to Manning, Maxwell & Moore Inc.

CRANE ORDERS PENDING

Cranes for various plants of Carnegie Steel Co., including Duquesne and Clairton, Pa., and Houston, Tex.; bids being taken or compiled.

Cranes for American Sheet & Tin Plate Co., for Gary, Ind., tin mill expansion; three cranes being figures and approximately 17 additional to be bought.

Cranes for American Steel & Wire Co., Rankin, Pa., understood inquiry up three months ago is being revived.

Cranes for Koppers Co. various coke oven installations; action to be taken at an early date.

Two ladle cranes for Bethlehem Steel Corp., Johnstown, Pa.; bids being taken.

Two 5-ton electric overhead cranes for West Philadelphia plant of General Electric Co., Schenectady, N. Y.; no specifications to be issued.

Among single inquiries are: 10-ton powerhouse crane for Leonard Refrigerating Co.; Grand Rapids, Mich.; 7½-ton crane for Chicago, Burlington & Quincy railroad, Clyde, Ill.; 5-ton crane for sanitary district of Chicago; several cranes for Pennsylvania railroad, Chicago district.

Will Develop Standards

The organization of a committee to carry on the important work of standardizing the quality of zinc coatings for iron and steel products has just been completed by the American Society for Testing Materials under the auspices of the American Engineering Standards committee. The following six technical subcommittees are ready to begin their work.

1. Hardware and fastenings, R. F. Hosford, chairman, American Telephone & Telegraph Co.
2. Sheets and sheet products, J. T. Hay, chairman, Central Alloy Steel Corp.
3. Plates, bars, structural shapes and their products, V. F. Hammel, chairman, Electric Bond & Share Co.
4. Pipes, conduits and their fittings, F. N. Speller, chairman, National Tube Co.
5. Wire and wire products, J. C. Johnson, chairman, Pennsylvania Railroad System.
6. Methods of testing, C. D. Hocker, chairman, Bell Telephone Laboratories.

The scope of the committees' work includes a wide range of products and methods of general industrial importance. As examples may be mentioned electrical fittings, including conduits, "galvanized" sheets and plates, water pipes, valves and fittings, agriculture tools and hardware, rivets, screws, nails, fencing material and woven wire cloth. All types of zinc coating, including the spray process, hot-dip and electro-galvanizing, sherardizing, electroplating, etc., will come under the work of this committee.

Oil Coke Stocks Large

Stocks of petroleum coke at the close of 1925 totaled 238,400 tons, compared with only 97,800 at the end of 1924 and 26,300 at the end of 1923, according to a report by the bureau of mines, Washington. Production in 1925 was 991,000 tons, against 761,000 in 1924 and 672,000 in 1923.

Increase Shown in 1925 Coke Output

COKE production in the United States in 1925 increased 16 per cent over 1924, as shown by final statistics compiled by the bureau of mines. The amount last year was 51,266,943 tons, compared with 44,269,605 tons in the year preceding, and the value in 1925 was $262,559,137 against $244,041,561. The foregoing does not include screenings and breeze, of which there were 3,818,865 tons in 1925, valued at $9,398,357. The totals also exclude petroleum coke, with a production of 991,000 tons in 1925, and retort, or gas house, coke.

The amount of by-product coke made last year was 39,912,159 valued at $210,827,571. In the year preceding the quantity was 33,983,568 tons, valued at $195,690,000. The 11,354,784 tons of beehive coke produced in 1925 was valued at $51,731,566, while in 1924 the output of 10,286,037 tons was valued at $48,351,552.

Coal charged into coke ovens last year reached a total of 74,532,232 tons, valued at $255,982,153, or an average of $3.43 per ton. The average yield of coke in proportion to the coal charged was 68.8 per cent, and the average yield of coke breeze, as shown by recovery, was 6 per cent.

Beehive coke ovens in existence at the beginning of 1925 numbered 60,432; there were 2909 ovens dismantled during the year, and on Dec. 31 the number operable was 57,587. By-product ovens were reduced in number from 11,413 to 11,290 during the year, but on Dec. 31 there were 429 under construction for completion in 1926.

Coke used by operators in blast furnaces or affiliated works amounted to 303,256,782 tons in 1925, valued at $143,748,247. The amount sold for furnace use to affiliated corporations was 6,121,457 tons, worth $30,292,223. Merchant sales of furnace coke totaled 5,632,095 tons, valued at $25,677,086, while for foundry use the quantity sold was 2,988,037, with a value of $20,602,045.

Production of by-products in 1925 are listed as follows: Gas, 639,644,062 cubic feet; tar 480,848,814 gallons; ammonium sulphate 278,037,618 pounds, and crude light oil 146,443,106 gallons; all to a value of $122,495,565. In 1924 the value was approximately $103,802,507.

Coke Production and Values in 1925

	By-Product				Beehive				Total	
	Ovens built	Coal used net tons	Coke produced net tons	Value of coke, ovens	Ovens built	Coal used net tons	Coke produced net tons	Value of coke, ovens	Coke produced net tons	Value of coke, ovens
Alabama	1,276	6,516,689	4,582,153	$16,347,971	4,961	137,106	88,328	$453,870	4,670,481	$16,801,841
Colorado	120	706,948	489,657	(a)	1,681	239,004	154,824	(a)	644,481	(a)
Georgia	....	.....	.....	.....	151	8,651	4,925	38,464	4,925	38,464
Illinois	849	4,224,420	3,011,497	22,568,845	....	.....	.....	.....	3,011,497	22,568,845
Indiana	1,177	6,866,855	5,141,940	36,635,104	....	.....	.....	.....	5,141,940	36,635,104
Kentucky	108	(b)	(b)	(b)	795	(b)	(b)	(b)	(b)	(b)
Maryland	300	1,383,344	1,019,209	(a)	....	.....	.....	.....	1,019,209	(a)
Massachusetts	419	797,699	535,302	(a)	....	.....	.....	.....	535,302	(a)
Michigan	420	2,450,275	1,751,118	11,708,519	....	.....	.....	.....	1,751,118	11,708,519
Minnesota	220	791,992	518,355	4,992,024	....	.....	.....	.....	518,355	4,992,024
Missouri	64	(b)	(b)	(b)	....	.....	.....	.....	(b)	(b)
New Jersey	206	1,242,275	903,997	(a)	....	.....	.....	.....	903,997	(a)
New Mexico	....	.....	.....	.....	1,030	(b)	(b)	(a)	(b)	(b)
New York	506	3,074,465	2,219,409	12,968,066	....	.....	.....	.....	2,219,409	12,968,066
Ohio	1,689	10,336,068	7,105,129	34,190,691	204	240,828	156,058	(a)	7,261,187	(a)
Oklahoma	....	.....	.....	.....	300	.....	.....	.....	.....	.....
Pennsylvania	3,220	14,679,836	9,853,262	34,518,863	34,668	14,572,282	9,574,341	41,875,615	19,427,603	76,394,478
Rhode Island	40	(b)	(b)	(b)	....	.....	.....	.....	(b)	(b)
Tennessee	24	125,860	88,879	471,059	1,675	200,373	127,609	690,041	216,488	1,161,100
Utah	33	316,285	168,150	(a)	819	247,473	146,009	1,240,256	314,159	(a)
Virginia	....	.....	.....	.....	3,124	661,193	421,691	1,501,623	421,691	1,501,623
Washington	20	68,655	40,757	289,782	332	62,644	38,500	327,483	79,257	617,265
West Virginia	311	1,526,820	1,055,992	4,479,866	7,847	804,055	490,040	2,168,879	1,546,032	6,648,745
Wisconsin	288	(b)	(b)	(b)	....	.....	.....	.....	(b)	(b)
Combined States	....	2,001,165	1,427,353	10,555,681	....	248,972	152,459	1,004,350	1,579,812	11,560,031
Undistributed	....	.....	.....	21,101,100	....	.....	.....	2,030,985	.....	58,563,032
	11,290	57,109,651	39,912,159	210,827,571	57,587	17,422,581	11,354,784	51,731,566	51,266,943	262,559,137

(a) Included under "Undistributed." (b) Included under "Combined States." In addition, there were 429 by-product ovens under construction Dec. 31, 1925. Figures are exclusive of screenings and breeze.

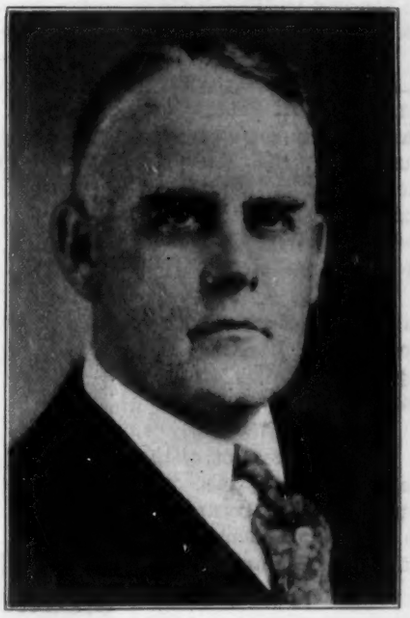
Industrial Men in the Day's News

S. W. Utley, Elected President of American Foundrymen's Association

TRAINED almost exclusively in the administrative phases of business, he has gained national recognition as an authority on distribution and sales methods for the foundry industry.

HIS long activity in industrial organizations has been rewarded with his election to head the country's largest foundry association.

ALTHOUGH he spent his youth on a farm, he follows many other metalworking executives in turning to golf for recreation and exercise.



ELECTION to the presidency of the American Foundrymen's association, announced in last week's issue of IRON TRADE REVIEW, comes as recognition and reward to Stuart Wells Utley for his work in developing industrial organizations and his activities in behalf of the foundry association. Having served in the past year as vice president of the American Foundrymen's association, he has been in position to observe closely the problems and possibilities of the foundry industry. His election to the presidency offers him the opportunity to be of material service to his association.

Mr. Utley has gained national recognition as an authority on sales problems and distribution in the foundry field. His contributions to technical society programs and to the industrial press have been many. Trained almost exclusively in the administrative and executive departments of the castings industry he has gained a broad insight of its distribution difficulties. His work in bettering sales methods has been of valuable benefit to the existing foundry practices. In the pre-convention issue of IRON TRADE REVIEW, Sept. 16, was published one of Mr. Utley's contributions to the technical press, under the heading of "Better Merchandising is Need of American Foundry Industry."

Mr. Utley was born at Pontiac, Mich., a suburb of Detroit, June 25, 1879. After spending his boyhood on a farm he returned to Detroit in 1892. He obtained his early education in high schools of Detroit, and was graduated from the University of Michigan, Ann Arbor, Mich., with a bachelor of arts degree in 1902. Shortly after graduation he entered the employ of the American Radiator Co. in its Detroit plants. After three years with that organization he became connected with the Detroit Steel Castings Co., Detroit, as cost clerk. He progressed through various positions as purchasing agent, assistant secretary, secretary and finally vice president and general manager, which last position he now holds.

In addition to his presidency of the American Foundrymen's association, Mr. Utley is president of the Steel Founders Society of America. He is a member of the executive committee of the National Founders association, a director of the Michigan Manufacturers' association, and vice president of the Detroit boards of commerce. For the past two years he has been president of the Employers' Association of Detroit. Mr. Utley is a member also of the American Iron and Steel institute.

Although Mr. Utley spent part of his boyhood on a western farm, he turns to golf for recreation and exercise.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

FRANK C. EATON has been elected president of the Pittsburgh Tool Steel Wire Co., Monaca, Pa., succeeding to the office formerly held by the late Godfrey Stengel Jr. Mr. Eaton formerly was vice president.

George H. Stengel has been elected vice president. Ralph H. Pauley, formerly secretary, now is secretary and treasurer, succeeding the late Mr. Stengel in the latter office. Dr. Alfred Stengel remains as a director. The Pittsburgh Tool Steel Wire Co. manufactures cold drawn fine steels.

* * *

Walter Ranney has been appointed purchasing agent of the New Home Sewing Machine Co., Orange, Mass., to succeed C. R. Liston.

* * *

William H. Woodin, president of the American Car & Foundry Co. and chairman of the American Locomotive Co., has been elected president of the Maidstone club, East Hampton, L. I.

* * *

W. H. Fitch has resigned as manager of the metallurgical department of the Fuller-Lehigh Co., Fullerton, Pa., manufacturer of pulverized fuel equipment.

* * *

Owen R. Rice, who recently joined the Freyn Engineering Co., Chicago, formerly was assistant blast furnace superintendent of the Maryland plant at Sparrows Point, of the Bethlehem Steel Co., Bethlehem, Pa.

* * *

W. H. Eisenman, secretary of the American Society for Steel Treating, is expected to leave his Cleveland offices shortly for his six weeks trip to Europe, announced during the recent convention of that society.

* * *

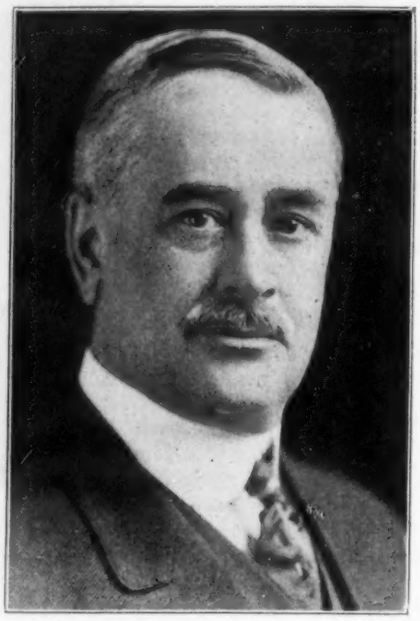
Gilbert H. Unruh, representative of the Link-Belt Co., Chicago, manufacturer of conveying equipment, has been given permanent location at Baltimore. His present headquarters are at 618 Regester avenue, Stoneleigh, Baltimore county, Md.

* * *

Dr. William M. Guertler, director of the Metall Institute der Technischen Hochschule, president of the German Metallurgical society and prominent metallurgist, addressed the Cleveland chapter of the American Society for Steel Treating Oct. 1.

* * *

S. T. Johnston, whose election as vice president of the American Foundrymen's association was announced in last week's issue, has been identified with the foundry industry since 1889. Mr. Johnston is a charter member of the Foundrymen's association, and has been connected actively with the organization since its formation. Mr. Johnston is a native of Scotland, coming to the United States in 1889. He immediately joined the Detroit Car Wheel Co., J. A. Whiting, one of the organizers of the association and an executive of the Detroit company, placing Mr. Johnston in the shipping department. When Mr. Whiting organized the Detroit Foundry Equipment Co. soon afterward, Mr. Johnston was made a salesman in the new company.



S. T. JOHNSTON

Mr. Johnston left the Detroit Foundry company to join the S. Obermayer Co., Chicago, with which he since has been identified. At present, Mr. Johnston is vice president of the Obermayer company. He was vice president of the American Foundrymen's association in 1908, has been on many committees and for several years was a director. Mr. Johnston has the distinction of having attended all the American Foundrymen's association conventions. He was active in the development of the Foundry Equipment Manufacturers' association, and now is president of that organization.

* * *

W. E. Worms, for over six years connected with the Jones & Laughlin Steel Corp., Pittsburgh, as assistant to the New York district manager of sales, has become associated with Stieglitz-Treiber Co. Inc., 18 East Forty-first street, New York, in its sales department, as assistant to the vice president.

* * *

J. O. Heitsenrether, who recently resigned as vice president and sales manager of the United States Refractories Corp., Mount Union, Pa., and who lately in those capacities had charge of its Pittsburgh office, is now affiliated with the General Refractories Corp., as manager of its Pennsylvania Clay Works department at Altoona, Pa.

* * *

W. D. Shuman, for the past seven years in charge of shape and plate sales for the Bethlehem Steel Co. on the Pacific Coast, with headquarters in San Francisco, has resigned. Mr. Shuman has been elected to membership in the San Francisco Stock & Bond Exchange and has opened offices at 133 Montgomery street.

* * *

Thomas T. Richards has resigned as vice president and sales manager of the Wagner Electric Corp., St. Louis, to become sales manager of the Arthur B. Shepard Corp., New York, structural steel construction company. He had been with the Wagner corporation for 21 years. He will maintain his financial interest in the Wagner organization.

* * *

R. C. Brower has recently been appointed general manager of Timken Roller Bearing Service & Sales Co., which maintains direct factory branches and distributors. Mr. Brower will make his headquarters in Canton, O., at the main plant of the Timken Roller Bearing Co. He has

been associated with the bearing industry since 1913; and for the past four years with the Timken company.

* * *

R. E. Zahniser, for 15 years with the sales department of the Jones & Laughlin Steel Corp. at Pittsburgh, has been transferred to the New York district sales office of the company to handle tin plate sales.

* * *

Judge Elbert H. Gary, chairman of the United States Steel Corp., New York, celebrates his eightieth birthday Oct. 8. In addition to becoming an octogenarian this year, he has rounded out a quarter of a century of service to the steel industry as chairman of the United States Steel Corp.

* * *

E. J. Kennelly has been appointed secretary and treasurer of the Midwest Castings Co., Middletown, O. He

(*Concluded on Page* 965)

Speakers Announced for Institute Meeting

The program for the thirtieth annual meeting of the American Iron and Steel institute to be held at the Hotel Commodore, New York, Oct. 22, has just been announced. Three sessions are scheduled, including a technical session at 10 a.m., a second technical session at 2 p.m. and the annual banquet at 7 p.m. A luncheon is to be served at noon. Addresses and papers to be presented at the various sessions are as follows:

Address of the president, Elbert H. Gary, chairman, United States Steel Corp., New York.

Paper: "Corrosion of Iron and Steel," F. N. Speller, metallurgical engineer, National Tube Co., Pittsburgh.

Paper: "Welding of Iron and Steel," Prof. C. A. Adams, director, American Bureau of Welding, New York.

Paper: "Plate Mills—Recent Developments and Tendencies," F. M. Gillies, superintendent of plate mills, Inland Steel Co., Indiana Harbor, Ind.

Paper: "Action of Sulphur in Basic Open-Hearth Steel Practice," A. N. Diehl, vice president, Carnegie Steel Co., Pittsburgh.

Paper: "Use of Manganiferous Ores and High-Manganese Basic Iron in Open-Hearth Steel Practice," Bert Smith, superintendent of blast furnaces, Wheeling Steel Corp., Wheeling, W. Va.

Paper: "Production of Low-Phosphorus Pig Iron in the Birmingham District," by E. K. Miller, superintendent of foundry furnaces, Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Steel Treater Secretary Goes to Europe

While visiting in Europe during the leave of absence recently given him by the American Society for Steel Treating, W. H. Eisenman, national secretary of the organization, will be the guest of foreign metallurgists, steelmakers and members of the society. Among the events which already have been scheduled are a dinner at the Hotel Metropole, London, at 7 p. m. on Oct. 18. At 9:30 a. m. on Oct. 20, he will be the guest at a breakfast at the Royal Victoria hotel, Sheffield, England. At noon on Oct. 26, he will be entertained at the Kaiserhof at Essen, Germany, at which time officials of Krupp gun works will serve as hosts. French members of the American Society for Steel Treating and leading representatives of the French steel industry will honor him at a dinner at the Hotel California, Paris, at 8 p. m. on Nov 4. Mr. Eisenman will sail for England on Oct. 9 on the TUSCANIA and will return to the United States about Nov. 20 on the AQUITANIA.

Obituaries

WILLIAM J. WATSON, organizer of the Buda Co., Harvey, Ill., and president at one time of this and several other metalworking companies in the Middle West, died Oct. 1 at his home in Chicago at the age of 83. Mr. Watson came to Chicago in 1873 as representative of the Middleton Car Spring Co., of which he became president in 1890. He also was a director of the First National bank, the Security bank of Chicago and the Second Security bank of Chicago, and for 17 years was president of the board of managers of the Old Peoples' home, Chicago.

* * *

Charles O. Dobbins, president of the Dobbins Mfg. Co., Indianapolis, automobile accessory manufacturer, died Oct. 1 at his home there.

* * *

Thomas Lynch, president of the Lynch Hardware Co., Brockport, N. Y., died Sept. 28 at that city. He was 80 years of age and had been in the hardware business for 40 years.

* * *

A. H. Mittendorf, vice president and director of the Marting Iron & Steel Co., Ironton, O., was 72 years old at the time of his death, Sept. 19 at Ironton.

* * *

Carl G. Janson, aged 70, founder of the Janson Iron Works, Oakland, Calif., died Sept. 29 following a three-month illness. Mr. Janson was a native of Germany and settled in Oakland in 1891. He was a member of various Masonic organizations.

* * *

Desmond Fitz Gerald, past president of the American Society of Civil Engineers, and prominent hydraulic engineer, died at the age of 80, Sept. 22 at Brookline, Mass. He was a fellow of the American Academy of Arts and Sciences and of the Royal Meteorological society in England.

* * *

Louis Sommerhauser, president and manager of the Spuck Iron & Foundry Co., St. Louis, who died Sept. 27, had been identified with the metalworking industries for 30 years. Mr. Sommerhauser had been president of the Spuck company since 1919, and he had been vice president from its incorporation in 1902 until his election to the presidency. The Spuck company, in addition to operating a foundry fabricated structural steel.

* * *

Alfred Craven, builder of a large portion of New York's subway system and one of the country's foremost engineers, died of old age at his home in Pleasantville, N. Y., Sept. 30. Mr. Craven was born 80 years ago, the son of Rear Admiral Thomas Tingley Craven. He graduated from the Naval Academy in 1867. After doing some work in mining engineering and in geological survey, he went to New York and devoted the rest of his life to construction work.

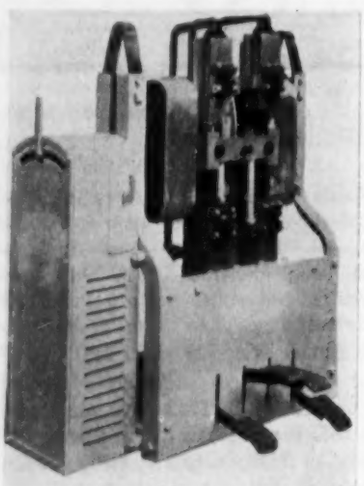
* * *

Nicholas B. Trist, aged 64, special wheel engineer with the Carnegie Steel Co., Pittsburgh, died at his home in Sewickley, Pa., Sept. 29. He was born in Savannah, Ga., in 1862, and his early boyhood was spent in Washington. As a young man Mr. Trist entered the service of the Pennsylvania railroad as an apprentice in the Altoona, Pa., shops, and served with that road in various capacities for about 23 years. Through Charles T. Schoen he became identified with the Schoen Steel Wheel Co., upon the entrance of that firm into the manufacture of solid wrought steel wheels. Mr. Trist became connected with the Carnegie Steel Co. when that company took over the Schoen Steel Wheel Co. in 1908.

Electric Rivet Heater Improved

No. 162

American Hoist & Derrick Co., St. Paul, announces an improved electric rivet heater, of which the principal feature is the redesigned center contact block, by means of which secure contact is made with all lengths of rivets. These contact elements are constructed of solid cast copper in such a manner as to hug the laminated iron core on 3 sides. As they have 30 times the current carrying capacity of a 1-inch rivet, there is little danger of burning out the elements with extended overloads. Heat control is of the multistage type and is located at the left hand of the operator. The transformer has been mounted close to the contact blocks, making a secondary current cable unnecessary. The machine accommodates rivets ranging in size from ¼ x ½ inch to 1 x 8½ inches. Contact blocks can be removed readily for purpose of refinishing.



Improves Vertical Shaper Design

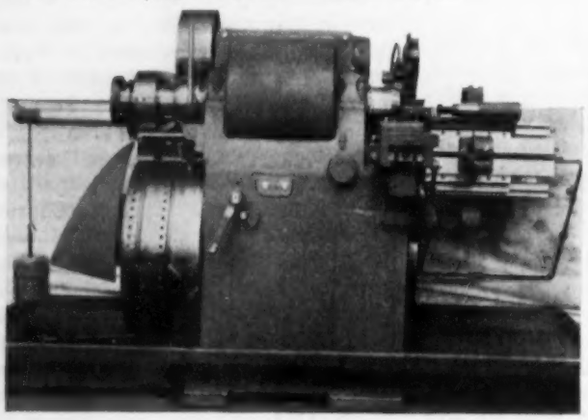
No. 164

Pratt & Whitney Co., New York, has designed a new 12-inch vertical shaper, featuring many operating conveniences not found in earlier models. The machine is rigidly constructed and consists of a solid bed mounting a rotary work table and a column which supports the vertical ram with its mechanism. By this type of construction, all cutting pressure is brought directly on the table and bed. The shaper is designed either for built-in motor drive or for single-pulley belt drive from a lineshaft. Power is controlled by a lever-operated friction clutch in which is embodied a brake for stopping the ram quickly. Tool head is of new and stronger design; special attention is called to the elimination of the tool-post binder screw. The three operating handwheels are located conveniently on the front of the machine. Transverse and longitudinal carriage travel are each 25 inches; special hand-control wheels are provided.

Lathe Features Simplified Drive

No. 163

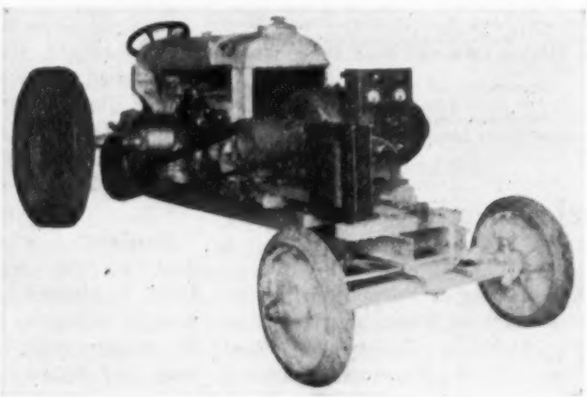
National Acme Co., Cleveland, has designed a new single-spindle automatic turret lathe of the Gridley type, which features an especially wide range of speeds and feeds. Construction and operation of the machine are the same generally as of the other lathes of this type. The tool differs primarily from its predecessors, however, in that it is driven either by one broad belt or by a single constant-speed motor. This simplification of drive is accomplished by means of a geared head built into the headstock, having one set of gears which will change both spindle speed and feed at the same time, and a second set through which the rate of feed can be changed independently. Many refinements making for strength and accuracy have been incorporated in this new model.



Combines Arc Welder with Tractor

No. 165

A new development in electric arc welding is the mounting on a tractor of a gas engine driven welder, for portable use at points remote from power lines. The assembled machine is marketed by the Pontiac Tractor Co., Pontiac, Mich., the welder is manufactured by General Electric Co. and the tractor is the product of the Ford Motor Co. The engine drives both tractor and welder generator. Tractor is equipped with rubber tires and can be driven to the work at 18 miles per hour. On arrival, the generator is easily connected to the engine by a belt, and the outfit is ready for welding. This equipment will be of service to welding contractors, boiler shops, marine repair shops, pipe line owners, tank builders, structural field contractors and oil well drillers.



Exhibits Aid Tool Sales

(*Concluded from Page 920*)

eration of the tool is similar to that of the larger sizes; rough pieces chucked at the loading station being presented in sequence at stations 2, 3 and 4 for the various machine operations. Four pieces are in process at one time and a finished piece is produced with each index cycle, the time of the completed piece being the time of the longest single operation 2½ seconds for indexing.

The distinct field of application for this tool comprises the smaller pieces for which the greater capacity of the larger machines is not required. Since this smaller work usually presents simpler combinations of machine operation, the three machining stations of the new model are more suitable, whereas the five stations on the larger machine often prove too much machine for the job. The smaller unit also requires less tool setting, consequently is quicker to set up quicker to change.

National Acme Co. has made a number of improvements in its Gridley-type single spindle automatic, the chief feature being increased power so that full advantage can be taken of the machine will produce true worm tooling methods. This machine, which is described as No. 163, is built in the 4¼-inch size. Operating principles are the same as those of the well-known Gridley-type spindle automatic. It differs primarily from the former machine in that it is driven either by one broad belt or by a single constant-speed motor. A geared-head is provided.

The turret is mounted below and slightly to the rear of the spindle nose. In indexing it revolves on its axis to bring a stock stop and four toolslides successively into the working position. Tools may be supported without overhang, permitting multiple operations by mounting one tool behind another. The spindle has been redesigned for strength and accuracy, the nose being located by a ground pilot and back plate when screwed into place. A forced feed lubricating system is employed.

To take the place of an old 10-inch model, Pratt & Whitney Co., has brought out a 12-inch model of vertical shaper. The new machine, which is described as No. 164, has for its principle features operating convenience and a good range of speeds and feeds. It has all the advantages of the old time slotter with the added improvement of speed and flexibility. The three operating handwheels are all located on the front of the machine, and the feed reverse lever and friction clutch lever also are within easy reach of the operator.

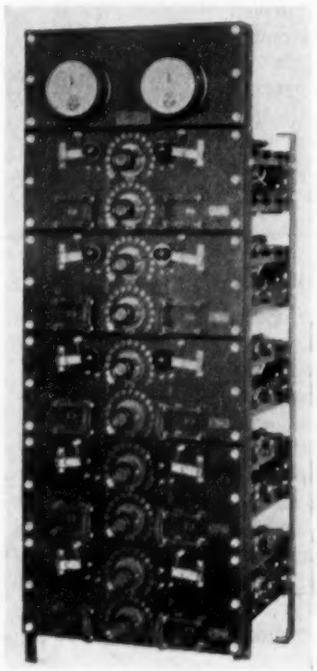
The tool head is of new design which is claimed to increase greatly the usefulness of the shaper. The tool post is carried in a clapper so mounted that the thrust of the cut forces it rigidly against the head. The clapper has the same action as in a horizontal shaper or planer and permits the tool to clear the work on the return stroke. The tool post binding screw has been eliminated, the tool being held by drawing the tool post against it from the back. This feature permits the tool post to pass over the work without interference as in no case does it project beyond the cutting edge of the tool.

Pratt & Whitney Co. also has announced a new automatic worm grinder and this is described at No. 167. This tool was developed to grind on a production basis the accurate worm gears required in automobile manufacture. It is said that the machine will produce true worm leads and corrects the hardening distortions. It will finish either single or multiple threads on one or both sides as desired.

Designs Battery Charging Units

No. 166

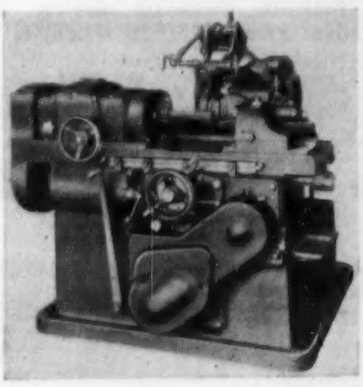
General Electric Co., Schenectady, has completed a new line of unit control sections for use with its battery-charging motor-generator sets. Illustrated here is a 10-circuit panel composed of 5 removable sections, for charging batteries from an Edison-type 3-wire system. For each circuit is provided a dial switch for the resistor, a switch for meter reading, an indicating lamp, a fuse and a resistor, both mounted on the back of the panel, and either a knife switch or an undercurrent shunt-trip contactor. The lamp indicates when the battery is connected to the section, while current is controlled by the dial switch; current strength and potential are read by means of the meter switch on a voltmeter and ammeter common to all circuits.



Grinder Takes All Thread Angles

No. 167

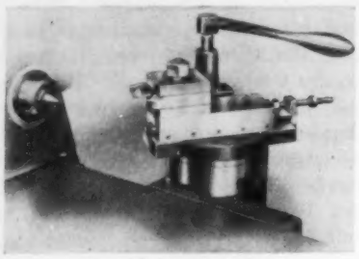
Pratt & Whitney Co., New York, has placed on the market a new automatic worm grinder designed especially for grinding automobile steering worms. The machine will finish single or multiple threads on one or both sides as desired. This grinder is motor-driven only; motor is mounted on a pad on the bed of the machine and is belt-connected to the various movements; a friction clutch is provided for stopping and starting the work and table movement. The wheel head is so arranged that the grinding wheel can be swiveled 30 degrees to the right and 45 degrees to the left to accommodate any thread angle; graduations are provided for accurate setting. Drive to the wheel is through a pair of spiral bevel gears running in oil. The wheel is fed to depth both by hand control and by a power feed ratchet. The machine grinds in one direction only; at the end of each stroke the wheel slide is withdrawn automatically and the table returns to the starting point, where the wheel moves in again.



Facing Attachment Has Many Uses

No. 168

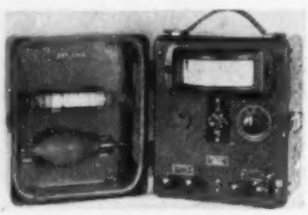
Porter-Cable Machine Co., Syracuse, N. Y., has designed an angular facing attachment for lathes, adapted for facing gear blanks, chamfering, necking, etc. Mounted on the tailstock ways, the device can be moved to any position on the bed, while a swivel feature allows the tool to be turned at any angle to the work.



Carbon Dioxide Meter Is Portable

No. 169

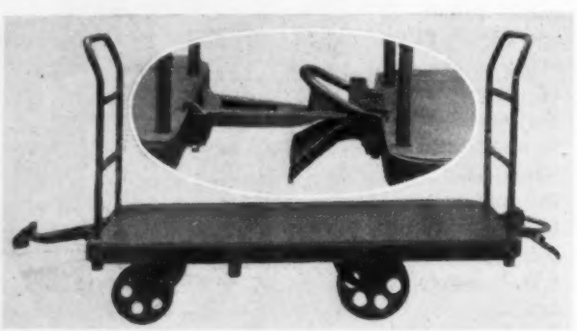
Bacharach Industrial Instrument Co., Pittsburgh, recently has placed on the market a new portable electric CO_2 meter measuring 6½ x 7½ x 9 inches and weighing 14½ pounds. The advantages claimed for this instrument are that a chemist or expert operator is not necessary, no liquids are required, the CO_2 is indicated instantaneously and a large number of tests can be made in a short time.



Coupler Functions Automatically

No. 170

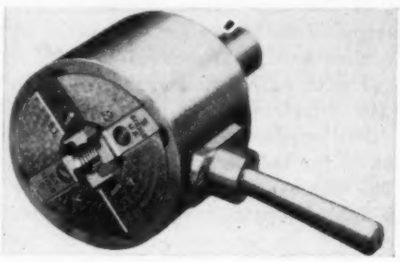
Clark Tructractor Co., Buchanan, Mich., has added to its line of haulage equipment a caster wheel trailer equipped with an automatic coupling device. The coupler sections are clamped to each end of the trailer by an original method and can be removed in less than two minutes, it is said. Trailer platform is of hard wood 1⅛ inches thick, reinforced by steel plates and measuring 3 x 6 feet. Frame is of heavy welded steel with steel rack sockets bolted on the sides; front and rear racks are of 1-inch pipe 35 inches high above the platform. Rear wheels are made from cast steel, are 12 inches in diameter and are equipped with roller bearings; rear axle is supported by heavy steel brackets. Front wheels are of the caster type, 10 inches in diameter and furnished with large swivel thrust bearings. All bearings are supplied with high-pressure lubricating nipples. Trailer is finished in dark green paint; its weight is 500 pounds.



Stationary Die Easily Adjusted

No. 171

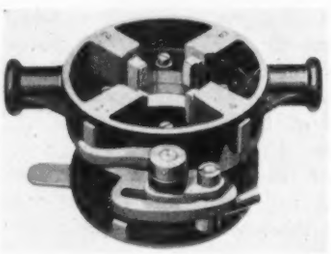
National Acme Co., Cleveland, has developed a new stationary or hand die, which can be used for either straightaway or close-to-the-shoulder threading. Cutting range is from ⅛-inch to 2½-inch, and size adjustments can be made quickly with a screwdriver without removing the die from its holder for the purpose.



Die Stock Has Open Construction

No. 172

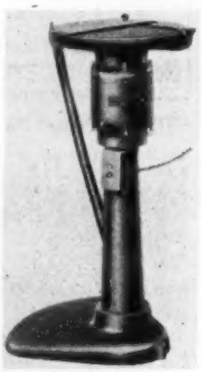
The Borden Co., Warren, O., has placed recently on the market a new adjustable die stock, the chief feature of which is the location of the cam under the dies, forming an open construction which permits complete lubrication of the tool. The die stock consists of only two main parts, the die head and body casting, between which lies the die cam.



Grinder Burrs Small Metal Parts

No. 173

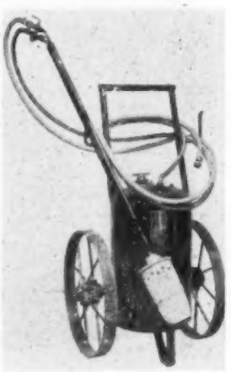
Porter-Cable Machine Co., Syracuse, N. Y., has designed a 15-inch horizontal disk grinder for burring small metal parts. The machine stands 40 inches high and is driven by a special ½-horsepower motor. Grinding disk is of heavy iron and is supported by a thrust bearing built into the motor. A vacuum dust remover is provided for the benefit of the operator.



Torch Uses Light or Heavy Oils

No. 174

Hauck Mfg. Co., Brooklyn, N. Y., has developed a new venturi suction torch which operates on heavy or light oils with an air pressure of from 50 to 100 pounds. Burner is of sheet steel with cast iron nozzle and the tank is of seamless drawn pressed steel; all fitting connections are welded. Flame range is controlled by the air cock.



Melting Pot Heats Electrically

No. 175

General Electric Co., Schenectady, N. Y., recently has placed on the market a new electric melting pot for lead, babbitt, etc., with a capacity of about 1000 pounds. This melting pot is similar in design to others manufactured by this company, except that three cast-in sheath wire immersion heating units are used instead of two. The new pot is 29 inches in diameter and stands 31 inches high; it consists of a sheet steel casing enclosing a cast iron crucible, properly insulated.

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174.	Suction torch	10/7
131.	Switch stand	8/5
108.	Testing machine	7/1
156.	Work stand	9/2

Report Indian Pig Iron Is Not Dumped

Washington, Oct. 5.—While no official announcement has been made it is understood the customs service has found, as the result of its investigations, that there is no dumping on the American market of pig iron produced by Indian blast furnaces.

This case must not be confused with the other, which has not yet been definitely decided, and which is pending before the custom service, as to the alleged bounty paid on India pig iron and whether or not a countervailing duty should be placed on it. The custom service has asked the state department to obtain some additional data before taking action.

During 1893 and 1894 the best grade of furnace coke was sold on cars at 85c a ton of 2000 pounds and the best Lake Superior bessemer ores at less than $3 a ton, delivered Cleveland.

Trust Brings Lighter Imports?

East, Appraising New European Iron and Steel Combination, Speculates Whether Curtailed Offerings Are in Prospect—American Producers Sound Friendly Note—Britain and Italy Outside

NEW YORK, Oct. 5.—Interest in the new European iron and steel trust, definitely a fact with France, Germany, Belgium and Luxemburg in agreement, centers in the possible effect upon European competition for business in this country.

Recently it has been rumored that offerings of foreign steel here would diminish greatly. One usually well-informed importer has stated, on the basis of advices from abroad, that he expects to see an end to this selling within 60 days. It is recalled, too, that since Henry Ford's railroad and the Boston & Maine railroad placed rails, abroad, European quotations on heavy rails have not been available.

At the moment there is no marked change in European competition for business in coast territory. Pig iron, steel bars and plates and wire products seem to be offered as freely as before.

Observers Were on Ground

Comment here upon the final consummation of the European trust have uniformly been favorable. It is said that representatives of large American interests have been at Brussels, where negotiations were concluded, and were fully informed. Judge E. H. Gary, who is president of the American Iron and Steel institute as well as chairman of the United States Steel Corp., has observed:

"I hope this consortium will meet with great success. I think its managers will be friendly toward American interests and the sentiment will certainly be reciprocated by the steel interests of America."

It is the understanding here that the trust, in addition to controlling business on the continent, will be a factor in the entire international market. The departure is that continental competition will be met as a unit. England not being a party to the trust, it is assumed that in Japan, South American and other markets there will be three prices—those of the trust, Great Britain and the United States.

Germany's Quota Largest

New York, Oct. 5.—As stated in IRON TRADE REVIEW of Sept. 30, page 890, the total European production of iron and steel to be allotted at this time is 26,000,000 tons, with prospects of 30,000,000 tons eventually. Germany has been assigned 43.18 per cent of this tonnage, France 31.19, Belgium 11.68, Luxemburg 11.63 and the Saar 5.77. For each ton of production each country will pay $1 into common fund. Any country exceeding its quota will pay in $4 per ton on the excess; in case of under-production there will be a rebate of $2 for each ton short. Quarterly reports and an annual adjustment are contemplated. The matter of fixing prices is said still to be in abeyance, although theoretically prices are optional with each country. Typical of the comment abroad is that of German Minister of Economy Curtius:

"The agreement between the large groups of Western European producers undoubtedly marks a return to common sense in economic matters in Europe. The governments of the countries concerned enabled the industrial leaders to strive for and to find an agreement on a private and non-government basis. Unless compelled, the governments in the future also will not depart from this reserve."

It is noteworthy that both Great Britain and Italy are not included in the new combination. In recent weeks diplomatic interchanges and visits have tended to renew the traditional friendship between these two nations.

Labor Sees A Menace

Detroit, Oct. 5.—Organization of the European iron and steel trust menaces American as well as foreign labor, according to delegates to the international metal workers federation, which has been in session here. An international organization of workers in the metal trades, for the interchange of information, was proposed. American representatives expressed fear that membership in a European organization might commit them to an offensive and defensive alliance with European, with differing conditions to be encounted.

Foreign Percentage Light

New York, Oct. 5.—Although only an extremely small proportion of the total iron and steel output of the United States is exported and therefore may come in contact with the operations of the new European trust, there are periods when a hitherto minor percentage may prove to hold the balance between maintained and curtailed operations. in August 1926 the combined domestic production of pig iron and steel ingots was 7,205,306 tons while the total of exports of pig iron and steel products was 171,588 tons, or 2.3 per cent of the production. For the first eight months of this year exports have been 2.4 per cent of the total production. Imports from all producing countries have been about one half of the exports.

Schwab Elected Head of Mechanical Engineers

Charles M. Schwab, chairman of the board, Bethlehem Steel Corp., New York, has been elected president of the American Society of Mechanical Engineers, it has just been announced following the report of the tellers of the annual election. Mr. Schwab was nominated for this position several months ago. He will assume his new duties at the annual meeting of the society in New York in December. Since 1918, Mr. Schawb has been an honorary member of the organization.

Other officers just elected are as follows: vice presidents, Charles L. Newcomb, manager Deane Works, Worthington Pump & Machinery Corp., Holyoke, Mass.; Everett O. Eastwood, professor of mechanical engineering University of Washington, Seattle; and Edwards R. Fish, vice president, Heine Boiler Co., St. Louis. Elected as new members of the council were: Paul Doty, chairman, Minnesota state board of registration of architects, engineers and land surveyors, Minneapolis; Ralph E. Flanders, general manager, Jones & Lamson Machine Co., Springfield, Vt.; and Conard N. Lauer, treasurer and general manager, Day & Zimmerman Inc., Philadelphia. Erick Oberg, editor of Machinery, New York, was re-elected treasurer.

Northwest Steel Rolling Mills Inc., Seattle, has increased its capital from $200,000 to $600,000.

Consider Specifications for Malleable

(*Concluded from Page* 951)

ferred to the American Foundrymen's association committee on malleable cast iron. The motion was adopted unanimously.

In discussing the paper, F. M. Robbins, Ross-Meehan Foundries, Chattanooga, Tenn., proposed a question as to whether or not a reduction in the specifications for malleable would prove beneficial. Mr. Bean, while not favoring a reduction, declared retaining the present specification and writing another to cover castings of lower strength might meet the situation. Edward Halsey, Terre Haute Malleable & Mfg. Co., Terre Haute, Ind., said that according to his experience, rejections were higher under the old specification than under the present one. Mr. Schwartz, while not committing himself on the question of specifications, declared that the important thing for the future of the malleable industry is to give the customer what he needs. W. P. Putnam, Detroit Testing Laboratories, Detroit, reported that an inquiry which he made as chairman of Committee A-7 of the American Society for Testing Materials showed that only 50 per cent of the castings made are sold under specification.

Professor Touceda read a paper on the resistance of malleable to repeated impact stresses which also introduced a comparison of machined and rough castings. A discussion of the effect of phosphorus on malleable and of the prevention of surface shrinks ensued. A paper entitled, "A Study of Malleable Cast Iron" by Dr. O. Quadrat and J. Koritta, Prague, presented on behalf of the Czechoslovakian Foundrymen's association, was read by Mr. Bean in the absence of the authors.

Discuss Malleable Melting

About 60 attended the luncheon and round table discussion of malleable foundry problems, held Thursday noon. In accordance with the established practice in connection with these luncheon discussions, names of the men participating will not be mentioned.

Various topics in the malleable industry brought up for discussion included the use of various fuels for melting and annealing and the comparison of powdered coal and hand firing. Most of the speakers favored the use of powdered coal because uniform conditions in the hearth may be maintained. Lower iron losses were found as was a lower refractory cost per ton of iron melted.

The effect of pouring temperatures on shrinkage was considered, but due to a number of factors in making the test bar etc., it was decided that shrinkage determinations are impractical. The use of malleable scrap also was discussed and several of those present reported the use of from 25 to 30 per cent without any difficulty resulting. One point stressed in using malleable scrap was that the carbon relation in the charged metal must be such that metal of the proper analysis may be tapped from the furnace.

Iron loss was a topic that created considerable interest. Most men agreed on the difficulty of obtaining accurate figures on the amount of metal charged and the amount of metal removed from the furnace. One instance of a loss as low as 3½ per cent met with considerable skepticism. The general concensus of opinion was that the average loss is from 6 to 7 per cent.

Hundreds Show Interest in Nonferrous Topics

THE outstanding feature of the aluminum session of the joint meeting held Monday was a paper on aluminum castings of high strength by Robert S. Archer, Aluminum Co. of America. The introduction of iron up to about 1.25 per cent to the alloy containing 8 per cent copper 92 per cent aluminum was mentioned as desirable, as it acts to prevent the cracking of castings, a conclusion confirmed by extensive foundry experience. George Glenk, brass foundry superintendent, Allis-Chalmers Co., West Allis, Wis., wanted to learn how best to add this iron, whether in the metallic form or incorporated as a "rich alloy" with other component metals. It does not matter how it is added, declared Mr. Archer, so long as it is properly alloyed. When added in the shape of iron wire, or thin sheet iron it is essential to see that the iron is perfectly clean. These are both good forms in which to add it. Tin plate scrap also is suitable, the small amount of tin carried in by this form of iron not being injurious.

A symposium held Tuesday morning dealing with nonferrous temperature determination was covered by six papers, five of which dealt with pyrometers and one with visual judgment of metal temperatures. Several different types of pyrometers were described and their advantages stressed. The closed end couple and the open end couple pyrometers both found favor. It was conceded the closed end couple is not suitable for use in phosphor bronze of high phosphorus content, and it was the opinion of H. M. St. John, Detroit Lubricator Co., Detroit, that the open end couple is the only one suitable for this type of alloy. Mr. St. John further stated that while it costs his company around $5000 yearly to conduct pyrometric observations of metal temperatures, it realizes a saving of five times that amount. Both Mr. St. John and N. K. B. Patch, Lumen Bearing Co., Buffalo, found that open end couples could be calibrated to the melting point of copper satisfactorily by winding copper wire around them and then heating to the melting point in a suitable furnace.

Round Table Meeting

About 125 foundrymen attended the round table discussion on brass foundry topics. N. K. B. Patch, Lumen Bearings Co., Buffalo, presided over the meeting. W. F. Roeser, bureau of standards, department of commerce, Washington, described recent research work conducted at 24 different foundries as to the present uses of pyrometers in nonferrous melting operations. He found considerable variance in the methods used by individual foundries, some of them decidedly detrimental to accurate determination of heats.

Great interest was displayed over the difficulties associated with meeting melting specifications of high-lead alloys. The used of sulphur in obtaining proper lead segregation was mentioned and approved. Another and more recent method was suggested, that of treating the lead with hydrogen prior to mixing the lead with the melt. The latter process was recommended from the scrap reclamation standpoint because it eliminates the possibility of getting sulphur-treated metals into scrap melts.

Some difference of opinion arose over the question of "what constitutes a chilled and a non-chilled casting." In the opinion of one speaker who has conducted some experimental work on the subject, the chilling action is directly attributable to the sand used, a dry sand core having a greater

chilling effect because of a higher heat conductivity.

An inquiry of one foundryman present as to an easy way to distinguish aluminum-bronze scrap from copper-tin scrap constituted a problem of which no solution was offered at the round table discussion.

At the Wednesday session of the Institute of Metals division of the American Institute of Mechanical Engineering . Dr. W. Guertler, Charlottenburg, Germany, discussed new developments in silver alloys. The lecturer stated that as little work had been done in the development of silver alloys there was a possibility of alloys of commercial value being discovered, and he outlined some of the work he had done. T. A. White asked about the possibility of producing silver alloys that would not tarnish in the presence of hydrogen sulphide, but little hope was held out by Dr. Guertler in this direction, as the only metals that can be added to silver to obtain such alloys are palladium, platinum and gold, and the amount of these metals required to produce a nontarnishing alloy is so great the admixture is too costly for commercial use. The English nontarnishing silver alloy was stated by Mr. White to contain zinc and antimony and to tarnish quite badly when laid away for some time.

Detroit Show Greatest Held by A. F. A.

(Concluded from last week's issue)

DUE to the variety, size and various colors of paint, the displays of sandblast and dust arrester equipment in the dairy building and coliseum are exceptionally attractive. That of the W. W. Sly Mfg. Co., Cleveland, consists of various types of sandblast mills, a complete sandblast room with turntable, a tumbling mill, a model dust arrester, and a complete pressure type rotary table with a separator and elevator. Another feature of this exhibit is a large molding sand reclaiming unit. In this installation, the sand first passes through a magnetic separator and a mixer and is fed into a hopper. From the hopper the sand is elevated to the separator where the sand is reclaimed. The dust and refuse sand is carried off by a dust arrester. A tilted sandblast barrel of the positive pressure type with the elevator and pressure tank is shown, as is a specially designed loading box for this type of equipment.

One feature of the exhibit of the Pangborn Corp., Hagerstown, Md., is a special loader for a direct pressure sandblast barrel. An electric hoist carried on a monorail lifts a specially designed loading skip and carries it to the sandblast barrel where the load of castings is dumped into the barrel. After the castings are cleaned, the barrel is stopped with the opening at the bottom and the castings drop into a special container carried on a truck beneath the barrel. The company also is displaying prominently a rotary sandblast table, a rotary cabinet type table with dust arrester equipment attached. This room is a combination of a rotary table and a cabinet unit, since the work may be carried into the room on a car or placed on the rotary table located at one end. After the work is cleaned it may be discharged from the room on the rotary table.

Several direct pressure sandblast units, a sandblast barrel, a radial sandblast barrel, a sandblast table room and a dust arrester installation feature the display of the New Haven Sandblast Co., New Haven, Conn. Ruemelin Mfg. Co., Minneapolis, is showing sandblast cabinets with plain and revolving tables, sandblast curtains, generators, guns, sand sifters and a number of exhaust fans and dust collectors.

The large exhibit of the American Foundry Equipment Co., Mishawaka, Ind., consists of an automatic rotary sandblast table in operation, a sandblast room, a sandblast barrel, and a sandblast pressure tank unit. The company also is showing cloth screen type dust arresters, a new core machine and several aluminum taper strip flasks. Three types of sand cutting machines are in operation preparing molding sand.

Recent improvements in core ovens are rated. The Foundry Equipment Co., Cleveland, is demonstrating brick core ovens of the rack and the drawer types, as well as a core rack for this type of equipment. An electrically heated oven, 19 x 19 feet, is built at the booth of Young Bros. Co., Detroit, in the coliseum. Several small core ovens and models of continuous conveyor ovens are displayed inside of the large unit.

Swartwout Co., Cleveland, is showing a metal insulated drawer type oven and a full section of a lift door type metal insulated oven including the lift door, the lifting mechanism and the structural frame. A rack type core baking oven with metal walls and specially insulated doors features the display of the Marshall Blow Pipe Co., Detroit. Drawings and data on core ovens, melting furnaces and heat treating funaces for the foundry industries are shown by Holcroft & Co., Detroit. Several types of metal abrasives and specimen castings cleaned with these materials are displayed by the Globe Steel Abrasive Co., Mansfield, O., and the American Steel & Abrasive Co., Galion, O.

Flasks of various types are shown. Truscon Steel Co., Youngstown, O., is displaying steel foundry flasks, bottom boards, core plates and racks, mold jacket, snap flask bands, alloy steel platforms and material handling equipment. Rolled steel flasks, wheelbarrows and trucks are being exhibited by the Sterling Wheelbarrow Co., Milwaukee.

Diamond Clamp & Flask Co., Richmond, Ind., has snap flasks, steel bands, jackets on display, while the H. L. Baumgardner Corp., Chicago, is using a special slip flask in making molds on the convention floor.

Numerous kinds of pattern lumber are given prominence at the booths of the Dock & Mill Co., North Tanawanda, N. Y., Sugar Pine Sales Co., San Francisco, and Kindt-Collins Co., Cleveland.

Samples of patterns and core boxes made of copper are shown by the Electro-Chemical Pattern & Mfg. Co., Detroit, Springfield Aluminum Plate & Castings Co., Springfield, O., is featuring aluminum castings and match plates.

Many types of foundry chaplets, tumbling mill stars and snap flask trimmings are shown by the Fanner Mfg. Co., Cleveland, while the Combined Supply & Equipment Co., Inc., Buffalo, is showing chaplets, skim skates and a special machine for applying paste to cores. Foundry supplies and equipment and polishing and plates supplies are shown by E. J. Woodison Co., Detroit.

Through charts, posters and photographs, the International Correspondence Schools, Scranton, Pa., is indicating its work in the foundry field.

Men of Industry

(*Concluded from Page* 957)

formerly was superintendent of the Fairbanks Co., Springfield, O.

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L. T. Pockman, for the past ten years manager of the Los Angeles district, has been appointed Pacific coast manager for the Chicago Pneumatic Tool Co., Chicago.

* * *

Ralph K. Mason has resigned as president of the Trumbull-Vanderpoel Electric Mfg. Co., Bantam, Conn.

Harmon J. Cook of Torrington,

JOHN R. BLAIR
Recently appointed manager of sales, Pittsburgh Steel Products Co., Pittsburgh, as announced previously

Conn., formerly secretary of the company, has been elected to succeed Mr. Mason.

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L. P. Feustman has resigned as vice president of the Worthington Pump & Machinery Corp., New York, effective Oct. 1.

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E. L. Becker, advertising manager of the Newport Rolling Mill Co. and Andrews Steel Co., Newport, Ky., has accepted an appointment as instructor of advertising in the commerce college of University of Cincinnati, Cincinnati.

* * *

R. H. Ismon has resigned as a director, secretary and treasurer of the American Can Co., New York, effective Nov. 1. R. A. Burger will succeed him as secretary and treasurer.

C. E. Green was elected controller and succeeds Mr. Ismon as a director.

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Fernand Turrettini, technical director and head of the Societe Genevoise d'Instruments de Physique, Geneva, Switzerland, is spending two or three weeks in the United States visiting machine tool plants and motor shops. Mr. Turrettini attended the National Steel and Machine Tool exposition in Chicago recently.

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J. D. Jones, W. J. Laffrey and Arthur Schreiner, formerly with the United Alloy Steel Corp., Canton, O., now are serving as assistant district sales managers for the Central Alloy Steel Corp., Massillon, O., with their headquarters in Detroit. G. G. Gries and J. S. Andrews, formerly with the Central Steel Co., continue also as assistant district sales managers for the Central Alloy corporation. A. Schaeffer is district sales manager.

* * *

William John Knox, who was research director for the late George Westinghouse for 14 years, is seriously ill at a hospital in New York following an operation. Mr. Knox's most recent notable invention was a system of cracking crude oil in such a way as to make possible the manufacture of a "no-knock" motor fuel without the addition of other substances. Mr. Knox was born 63 years ago.

* * *

H. Kenneth Briggs has been elected assistant secretary of the American Society for Steel Treating, a new office. Mr. Briggs was born in Minneapolis, Oct. 9, 1894. He attended Shattuck school, Faribault, Minn., and later was graduated from the university of Minnesota. After leaving the university he joined the Minneapolis Electric Steel Casting Co., Minneapolis. For several years prior to his recent election he was metallurgist for the Minneapolis company. He is a member also of the American Chemical society.

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Kenneth L. Clark, formerly of the steel division of Henry D. Disston & Sons, Philadelphia, has joined the Kinite Corp., Milwaukee, manufacturer of die steel. He will supervise representation in Michigan, Illinois, Indiana, Iowa and a portion of Missouri.

R. H. Herbst formerly of the Milwaukee office of the Kinite corporation now represents the company in Michigan with an office at 2-233 General Motors building, Detroit.

P. L. Getzinger with offices at 709 First National Bank building, Chicago, now represents the company in Illinois and Indiana.

* * *

Charles S. Churchill, vice president in charge of purchases, real estate and valuation for the Norfolk & Western railway, retired under the age limit of active service Sept. 30, after 40 years of service. He was born in New Britain, Conn., Sept. 22, 1856, educated in New Haven primary and secondary schools and was graduated from Yale university in 1878. After one session of teaching a district school he entered the railroad field. His progression was consistent and he was made vice president in October, 1918. Mr. Churchill is a member

COL. LEONARD S. HORNER
Whose election as president of Niles-Bement-Pond Co., New York was announced last week's issue

of the American Society for Testing Materials, and the Institution of civil engineers.

* * *

Carl G. Schluederberg, has been appointed general manager of the George Cutter Co., South Bend, Ind., according to an announcement made by F. A. Merrick, vice president and general manager of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., Mr. Schluederberg received his education in the Kiskiminetas Springs preparatory school and Cornell university. He holds the degree of doctor of philosophy from that university. George Cutter Co. is a subsidiary of the Westinghouse company. He is a member of the National Electric Light association, the American Institute of Electrical Engineers, the American Chemical society, and the American Electrochemical society.

British Steel Industry Is Prostrate

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charged for the product. A fair inquiry exists in the constructional steel department. English steel, however, is scarce, and large use is made of foreign brands of which there is plenty on offer. Steel bars are quoted at £7 delivered ($33.95), billets £6 ($29.15), angles £6 7s 6d ($30.72). Dejoists about £6 6s 6d ($30.72). Delivery is promised from the Continent in five or six weeks.

A restart of a large plate mill in South Wales is announced by the Birmingham branch of a company this week. Structural steel plates are firmer and as much as £9 2s 6d ($44.25) for quick delivery is quoted by the north of England. Orders for post-strike delivery are accepted at £8 2s 6d ($39.35).

Belgian No. 3 iron is on offer at £6 5s ($30.36) and is being utilized by Midland nut and bolt makers who have good orders in hand. All Continental prices have this week shown an upward tendency and mills are said to be booked for two or three months ahead.

The galvanized sheet trade is well occupied and some works are fully booked to the end of October. The trade is described as between the seasons, the autumn trade not having developed yet. Quotations range between £16 10s ($80.07) and £16 15s ($81.28). The export trade is quieter, the unsettled state of affairs in China having a marked effect on business with that country.

In the tin plate trade some business has been negotiated within the last few days for delivery after the strike. Quotations are about the same at £1 3s ($5.58) for stock plates, while for delivery after the strike £1 0s 6d ($4.98) is named. Export business has been improving and a few inquiries are still in the market for prompt shipment to Eastern countries.

English Imports Widely Exceed Exports

Birmingham, Eng., Sept. 27.—(*European Staff Service*)—The British board of trade's return for August shows a total export of iron and steel products, including scrap, of 170,108 tons, compared with 249,826 tons July and 295,228 tons in August last year.

Imports, including scrap, were 320,886 tons, compared with 281,017 tons in July and 295,228 tons in August last year.

The United States took only 50 tons of pig iron, compared with 2830 tons last year. During the eight months, however, that country received 83,532 tons compared with 39,205 tons in the same period in 1925. There was a heavy fall in pig iron exports generally, only 8906 tons of forge and foundry iron going abroad, compared with 25,460 tons in July. Continuance of the coal strike account for decreases under nearly all heads, including steel girders, of which only 493 tons were exported, compared with 3199 tons in July and 4664 tons in August, 1925.

Increased imports are recorded for most products. Imports of forge and foundry iron were 19,211 tons, compared with 15,860 tons in July and 12,352 tons in August last year. Steel blooms and billets continue to increase, 85,692 tons being imported in August, compared with 76,549 tons in July and 62,257 tons in August last year. A large increase is also noticeable in plates and sheets, the figure for August being 27,930 tons, compared with 21,375 tons in July and 14,191 tons in August last year.

Only 3051 tons of coke and manufactured fuel were exported in August, a heavy fall, compared with 11,887 tons in July and 266,296 tons in the same period last year. Large imports of this material, however, took place owing to the coal stoppage, 89,356 tons coming to this country compared with 38,892 tons in July and 150 tons in August last year. Imports of coal amounted to 3,970,442 tons as compared with 2,319,657 tons in July and only 1021 tons in August 1925. Only 2184 tons of coal were exported during the month, compared with 3,272,110 tons in August last year and 7381 tons in July.

General exports were valued at £49,786,744, compared with £57,263,806 in July and £61,037,999 in August last year.

The value of the general imports was £101,137,290, against £100,290,593 in July and £91,737,921 in August last year.

Belgian Steel Mills Fully Booked

BRUSSELS, Sept. 27.—(*European Staff Service*)—The last meeting of the Brussels metals market was marked by an unusual firmness in prices despite quietness of demand. Costs have been rising constantly and prices are being adjusted upward in compensation. Furnaces and mills are congested with orders and deliveries on new business range from four to five months. Sellers now control the market, whereas only a few weeks ago buyers dominated the situation. Luxemburg manufacturers are enjoying market conditions similar to those prevailing in Belgium, and competition from this source is practically absent.

The Franco-Belge-Luxemburg pig iron syndicate has increased the export price of No. 3 foundry from £3 9s to £3 11s ($16.71) to ($17.19) f.o.b. Antwerp. The domestic price for September has been fixed at 600 francs ($16.50) f.o.b. furnace. Orders from England for foundry iron are keeping Belgian and Luxemburg furnaces working to capacity.

Buyers are scouring the market for semifinished steel. Since the beginning of the coal stoppage in England continental manufacturers have enjoyed an unparalleled demand for semifinished steel products. Orders for English account have congested mills to such an extent that practically all large makers have withdrawn from the market. English tube mills are offering as high as £6 ($29.10) f.o.b. Antwerp for skelp. Basic bessemer blooms bring £4 10s ($21.80), billets £4 16s ($23.24) and sheet bars £5 1s ($24.49). Prices of steel products now average 10 per cent higher than two months ago.

Prices of finished steel products continue to rise steadily. Little tonnage is being sold on the new basis but mills refuse to make concessions in view of their heavy commitments. Consumers, on the other hand, are deferring purchases as they are of the opinion the present strength of the market is largely due to two factors, the coal stoppage in England and the proposed European steel trust. As English miners are slowly drifting back to work and there appears to be some hitch in the negotiations involving the steel cartel, buyers are waiting for situation to crystallize.

Merchant bars for export now command from £5 2s 6d to £5 5s ($24.85 to $25.45) f.o.b. Antwerp. Structral shapes are being done around £5 ($24.25). Plates 3/16-inch thick and heavier are being sold at from £5 12s to £5 15s ($27.13 to $27.85) f.o.b. Antwery. The domestic market shows signs of increased stability. The practice of basing domestic prices upon the rate of exchange of the pound sterling has been abondoned and firm prices in francs now are being quoted, much to the relief of Belgian jobbers and contractors.

Luxemburg Output Is at Steady Rate

Brussels, Sept. 27.—(*European Staff Service*)—Production of pig iron in Luxemburg during July was 211,279 metric tons, against 211,251 tons in June. July output included 205,848 tons of basic bessemer and 5431 tons of foundry. Output of steel ingots and castings was 191,538 metric tons, against 190.354 tons in June. July output included 189,039 tons of basic bessemer, 2012 tons of open-hearth and 487 tons of electric steel. The following table gives figures for the first seven months of this year compared with the monthly averages of the three preceding years and 1913, in metric tons:

Mon. ave.	Pig iron	Steel ingots and castings
1913	212,320	110,500
1923	177,220	100,100
1924	181,100	157,195
1925	195,335	173,690
1926		
Jan.	203,673	173,875
Feb.	185,098	170,447
March	212,729	195,784
April	196,651	180,528
May	194,896	169,756
June	211,251	190,354
July	211,279	191,538

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

STAHLEKER STEEL CORP. has been organized as an iron and steel warehouse and merchandising firm at Boston. A sales office has been established at 19 Congress St. and a warehouse at 25 Water St., Somerville, Mass. The company announces that its present stock includes different grades of machinery, steel bars, annealed and unannealed tool steel knowr as the Avesta brand, and structural shapes including angles, channels, beams, plates, etc. The company represents mills making a full range of steel products.

Carl Stahleker, who is the vice president and general manager, was associated with Brown-Wales Co., iron and steel jobber, Boston, for more than 20 years. Other officers of the new company are B. Atwood Robinson, president, and Wallace Blanchard, treasurer.

* * *

NEW FOUNDRY APPLIANCE CO., Trenton, O., H. R. Engle, president and general manager, is completing a warehouse adjoining its plant.

* * *

JOHN C. KUPFERLE FOUNDRY CO., St. Louis, is celebrating the seventieth anniversary of its founding, issuing a special catalog to mark the occasion.

* * *

SKELLY OIL CO., Eldorado, Kan., has given a contract to the Graver Corp., East Chicago, Ind., for three cracking process units of high pressure type, to be operated with low pressure units now in operation.

* * *

DUNCAN FOUNDRY & MACHINE WORKS, Alton, Ill., which has been a partnership for many years, has been incorporated with no change in officers, location or policy of operation.

* * *

YOUNGSTOWN BOILER & TANK CO., Youngstown, has brought the Oak street foundry property of the United Engineering & Foundry Co. and will double its manufacturing capacity.

* * *

BUCKEYE WIRE & IRON CO., Columbus, O., 668 Raymond street, founded in 1907 by M. G. Rich, has been reorganized and new interests have taken over control. Herbert Brooks has been made vice president and general manager and William E. Curran will be associated in the management.

* * *

CHROMILITE PROCESS CORP., Hartford, Conn., has been organized by interests connected with the New Haven Sherardizing Co., also of Hartford, and the Metal Protection Corp., Indianapolis, Ind. August F. Schoen is president. The company will do rust-proofing, metal finishing and chrome nickeling of steel, and will operate plants in Akron, O., Hartford, Conn., and Springfield, Mass.

* * *

DEEMER ALLOYS CORP., Wilmington, Del., has been formed and will have its plant in operation this month on production of brass, bronze, aluminum and copper castings. Frank J. Deemer, formerly works manager of the Deemer Steel Co., is president and general manager and W. S. Ferguson, formerly with the American Manganese Steel Co., is secretary and treasurer and in charge of sales.

* * *

LIBERTY MOTOR VEHICLE CO., recently incorporated at Toledo, O., is preparing to manufacture a gas-electric motor bus. Frank C. Schmidt is president, Elmer G. Griese vice president, Russell Kinkaid secretary and treasurer. Mr. Schmidt is president of the Liberty Highway Co., operating trucks between Detroit, Toledo and Cleveland. The first bus of the new type is being built at the plant of the Cleveland Automatic Machine Co., Cleveland.

* * *

DARWINS, LTD., has been formed at Sheffield, Eng., with a nominal capital of £1,000,000, to amalgamate and take over the following allied businesses:—Darwin and Milner, Ltd., Sheffield; Sybry, Searls and Co., Ltd., Sheffield; Spartan Steel Co., Ltd., Sheffield; Nelson Tool Co., Ltd., Sheffield; Cobalt Magnet Steel Co., Ltd., Sheffield; Akrat Steel & Wire Mills Co., Ltd., Sheffield; Beeley Wood Steel Co., Ltd., Sheffield; Sheffield Annealing Works, Ltd., Sheffield; Hos-Syb Works, Ltd., Warsaw, Poland and Sheffield; Birks, Stevens & Son, Ltd., Sheffield; Darwin & Milner, Inc., Cleveland, Ohio. Darwin & Milner, Ltd., Brussels; Neuenteichwerk, Lennep, Rhld; the administration of which is centered in the recently acquired Fitzwilliam Works, Templeborough, Sheffield, Eng. The various sections of the business are continuing under the same management and trade marks, and manufacturing will also still be carried on at the Cannon Steel Works, Carlisle Street, Sheffield; Beeley Wood Forge, Sheffield, and Akrat Steel & Wire Mills, Sheffield.

* * *

HINKLEY MOTORS & PARTS ized with C. C. Hinkley as president and general manager, has taken over the assets of the Hinkley Motors, Inc., of Ecorse, and will carry on the manufacture of the line of engines and transmissions heretofore engaged in by the old company. The new company has purchased the property of the Mott Wheel Co., Jackson, Mich., and will move the business from Detroit at once.

* * *

AMERICAN BRAKE MATERIAL CORP., Buffalo, N. Y., has been organized as a subsidiary of the American Brake Shoe & Foundry Co., to manufacture a braking material and a brake shoe for motor vehicles. Tests have been under way for two years and production is about to be started at the plant of the American Malleable Co., another subsidiary. A. Algeltinger is president of the new company, J. S. Thompson vice president, M. N. Trainer vice president, W. A. Blume vice president, G. Judd secretary and C. Ames treasurer.

Societies Are Merged

National Electric Manufacturers' association is the name of a new organization representing about 270 of the country's leading electrical manufacturing plants. The association is the result of a merger of the Electric Power club, Associated Manufacturers of Electrical Supplies and the Electrical Manufacturers' council. Gerard Swope, president of the General Electric Co., Schenectady, N. Y., is president of the new organization.

The first bar iron rolled in New England was rolled in Boston in 1825.

Current Statistics of Industry

Bookings and Shipments of Shapes Balance

Washington, Oct. 5.—Bookings and shipments of structural steel shapes in August were in balance, 250,100 tons being the total of each, according to reports to the department of commerce. Actual bookings reported by 180 companies with 260,455 tons monthly capacity were 214,580 tons, an increase of 24,549 tons over bookings of 190,031 tons in July by 194 companies. August bookings were at 82 per cent of capacity, compared with 71 per cent in July and 78 per cent in August 1925.

The following table lists reports of 203 identical companies including in earlier months 21 additional organizations now out of busness. The present capacity is 272,905 tons a month, compared with 269,720 tons in 1925, 261,805 tons in 1924, 254,010 tons in 1923 and 254,750 tons in 1922.

1925	Actual tonnage	Per cent of capacity	Computed tonnage	Shipments computed
Total (8 mos.)		....	1,747,650	1,778,150
Aug.	209,752	78	237,900	244,000
Sept.	216,428	80	244,000	240,950
Oct.	239,680	89	271,450	268,400
Nov.	191,170	71	216,550	225,700
Dec.	200,147	74	225,700	240,959
Total (12 mos.)			2,706,850	2,754,150
1926				
Jan.	161,414	59	179,950	207,400
Feb.	163,400	60	183,000	192,150
March	184,139	68	207,400	250,100
April	196,457	73	222,650	244,000
May	206,669	76	231,800	237,900
June	†199,002	73	222,650	262,300
July	‡190,031	71	216,550	268,400
Aug.	*214,580	82	250,100	250,100
Total (8 mos.)		....	1,714,100	1,912,350

*Reported by 180 firms with a capacity of 260,455 tons.
†Reported by 199 firms with a capacity of 271,205 tons.
‡Reported by 194 firms with a capacity of 268,415 tons.

Foundry Equipment Sales Increase in August

Cleveland, Oct. 5.—Shipments of foundry equipment in August were the lowest since September 1925, totaling $384,924 compared with $448,390 in July and $388,370 in August 1925, according to reports of 13 manufacturers to the Foundry Equipment Manufacturers' association. Orders increased from $378,163 in July to $391,935 in August. Unfilled orders also increased, being $411,119 on Aug. 1 and $422,148 on Sept. 1. August sales showed a gain of 19 per cent over those of the same month last year, and 4 per cent over July. Further comparison of sales, shipments and unfilled orders follow:

1925	Sales	Shipments	Unfilled orders
July	353,560	352,602	460,383
Tot. to Aug. 31	$2,888,552	$2,794,634	.....
August	580,864	388,370	457,925
September	296,437	351,121	598,143
October	424,054	400,646	544,041
November	480,327	414,148	518,794
December	416,610	472,144	593,455
Total	$4,665,300	$4,362,794	.....
1926			
January	$ 414,121	$ 445,377	$ 550,016
February	472,814	422,004	501,793
March	483,010	525,655	536,978
April	434,626	402,494	504,671
May	425,638	415,082	506,214
June	407,940	417,632	524,382
July	378,163	448,390	511,290
August	391,935	384,924	411,119
Tot. to Aug. 31	$3,408,247	$3,461,558	.....
Sept. 1	.....	.....	422,148

Orders for Steel Furniture Show Slight Gain

Washington, Oct. 5.—Steel furniture orders in August showed a slight gain over July, according to reports of 33 manufacturers to the department of commerce. August orders totaled $2,298,526, compared with $2,283,666 in July. Shipments also registered a gain over July, but unfilled orders dropped. Shipments, orders and unfilled orders in the shelving group were greater in August than in July. Further comparisons follow:

BUSINESS GROUP

1925	Orders received	Shipments	Unfilled Orders
August	1,664,649	1,688,965	1,358,386
Total (8 mos.)	$17,412,418	$17,237,083	$11,956,927
September	1,969,769	1,816,484	1,535,231
October	2,170,076	2,130,498	1,406,117
November	1,975,117	1,885,505	1,496,242
December	2,454,277	2,418,577	1,531,505
1926			
January	3,063,833	2,859,393	1,927,777
February	2,662,095	2,598,713	1,975,884
March	2,687,268	2,843,869	1,804,059
April	2,936,884	2,782,167	1,783,734
May	2,464,457	2,575,561	1,588,788
June	2,556,631	2,605,502	1,535,166
July	2,283,666	*2,149,546	*1,668,989
August	2,298,526	2,342,615	1,637,538
Total (8 mos.)	$20,953,360	$20,757,366	$13,921,935

SHELVING

1925			
August	516,694	452,716	447,255
Total (8 mos.)	$4,286,868	$4,149,910	$3,344,721
September	624,676	542,173	511,689
October	730,911	622,471	626,933
November	686,814	574,905	739,831
December	620,947	788,461	570,941
1926			
January	582,016	578,161	584,824
February	656,367	603,501	633,935
March	583,701	726,413	604,991
April	704,482	699,370	570,693
May	580,995	617,260	587,310
June	606,698	601,913	553,660
July	604,271	531,361	602,134
August	610,617	545,901	662,148
Total (8 mos.)	$4,929,097	$4,903,880	$4,799,695

*Revised.

Steel Castings Bookings Lowest in Year

Washington, Oct. 5.—Bookings of steel castings in August totaled 65,622 tons, or the smallest since September 1925 when 59,326 tons was booked, according to reports by the department of commerce compiled from returns of 108 reporting companies. Production of 79,002 tons also showed a decline from the July figures. Bookings were at 51 per cent of capacity in August and shipments at 61 per cent. Further comparisons of bookings and production follow:

BOOKINGS

	Total net tons	Per cent capacity	Railway specialties net tons	Miscellaneous net tons
1913	57,184	67	27,600	29,584
1914	43,602	51	21,142	22,460
1915	64,252	72	29,966	34,286
1916	101,015	107	54,645	46,370
1917	88,394	88	34,529	53,865
1918	109,374	105	48,124	61,450
1919	44,120	41	13,692	30,428
1920	78,597	68	33,080	45,517
1921	29,707	26	12,210	17,497
1922	77,167	67	38,890	38,277
1923	88,790	75	40,318	48,472
1924	77,764	64	39,961	37,803
1925	75,041	60	31,386	43,655
August	63,606	51	23,130	40,476
Total 8 mos.	583,309	58	240,322	342,987
September	59,326	47	20,738	38,588
October	74,283	59	26,434	47,849
November	83,197	66	38,485	44,712
December	100,377	80	50,654	49,723
Total	900,492	60	376,633	523,859
1926				
January	106,058	83	51,357	54,501
February	93,288	73	41,236	52,052
March	104,847	82	44,507	60,340
April	86,685	67	26,713	59,972
May	78,889	61	31,318	47,571
June	68,030	53	15,992	52,038
July	*74,430	57	29,258	*45,172
August	65,622	51	22,773	42,849
Total (8 mos.)	677,849	66	263,354	414,495

PRODUCTION

1926				
January	91,946	72	37,321	54,625
February	90,799	71	41,191	49,608
March	108,231	84	46,628	61,603
April	105,602	82	41,446	64,156
May	95,608	74	42,087	53,521
June	93,392	73	34,290	59,102
July	*85,338	66	30,613	*54,725
August	79,002	61	25,783	53,219
Total (8 mos.)	749,918	73	299,359	450,559

*Revised.

Tractor Shipments Off

Washington, Oct. 5.—Shipments of electric industrial trucks and tractors in August totaled 97 compared with 111 in July and 144 in June, according to returns of nine leading manufacturers to the department of commerce. Further comparisons follow:

1925	Domestic: Tractors	Domestic: All other types	Exports
Quarter ending March 31	45	259	41

Quarter ending June 30	49	280	50
Quarter ending Sept. 30	57	286	12
Quarter ending Dec. 31	41	295	25
1925 Total	192	1,120	128
1926			
Quarter ending March 31	44	310	17
Quarter ending June 30	50	281	32
January, 1926	21	86	4
February	15	96	5
March	11	128	8
April	17	90	4
May	12	87	9
June	21	104	19
July	15	95	1
August	14	81	2

Stoker Sales Drop Again

Washington, Oct. 5.—Mechanical stoker sales in August totaled 104, a drop from 125 in July, and considerably under the June total of 175. August 1926 was ahead of the same month of 1925 when 91 were installed. Comparisons of fire tube and water tube installations by months follow:

	Stokers sold	Fire tube boilers	Water tube boilers
1923 Total	1,464	177	1,287
1924 Total	1,128	161	967
1925 Total	1,348	263	1,085
July	147	30	117
August	91	27	64
September	119	34	85
October	114	22	92
November	76	8	68
December	108	21	87
January, 1926	72	10	62
February	83	12	71
March	132	31	101
April	145	22	123
May	129	54	75
June	175	24	151
July	125	20	105
August	105	25	79

Babbitt Use Declines

Washington, Oct. 5.—August total apparent consumption of babbitt metal was only 4,986,825 pounds, compared with 5,015,464 pounds in July and 5,441,923 pounds in August 1925, according to reports of 27 manufacturers to the department of commerce. Comparisons of consumption by months follow:

1925	Total apparent consumption	Sales by manufacturers	Consumption by producers
August	5,441,823	4,068,706	1,373,117
Total (8 mos.)	42,401,159	33,085,967	9,315,192
September	4,621,033	3,579,780	1,041,253
October	5,550,247	4,169,870	1,380,377
November	4,954,683	3,534,026	1,420,657
December	4,878,806	3,910,160	968,646
Totals	62,405,928	48,279,803	14,126,125
1926			
January	5,152,694	3,708,383	1,444,311
February	5,139,952	3,867,710	1,272,242
March	5,860,453	4,852,805	1,007,738
April	5,229,199	3,817,253	1,411,946
May	4,797,038	3,640,369	1,156,669
June	4,963,975	3,633,211	1,330,284
July	5,015,464	3,676,664	1,338,800
August	4,986,825	3,632,920	1,353,905
Total (8 mos.)	41,145,690	30,829,795	10,315,895

Industrial Business Changes

BEACON OIL CO., Boston, has bought the plant of the New London Marine Iron Works, consisting of land and several buildings with waterfront and railroad siding at Fort Neck, Conn. The plant has not been occupied for several years, but was originally known as the Morgan Iron Works.

* * *

Sun Machinery Co., Newark, N. J., has moved from 68 Clinton street to 39 Hamilton street.

* * *

Johnson Machine Works, Inc., Port Angeles, Wash., has changed its name to Gate City Machine Works, Inc.

* * *

Bourne-Fuller Co., Cleveland, has moved its Detroit offices from the Dime Bank building to 5-158 General Motors building.

* * *

Link-Belt Co., Chicago, has opened a branch office at Utica, N. Y., at 131 Genessee street, in charge of F. P. Hermann Jr.

* * *

Allison Pattern Works, Dayton, O., has moved from Swanee and Wyandot streets to 460 Bacon street.

* * *

W. & H. Nut Co., Detroit, will remove its plant and offices to Westfield, Mass., where its operations will be enlarged.

* * *

Niles-Bement-Pond Co. has moved its Boston office from 125 Purchase street to 75 Batterymarch street. Marcus Chase is district manager.

* * *

Hartel Bros. & Co., Boston, dealer in iron and steel products, has moved its offices and warehouse to 85 West First street where larger facilities are available.

* * *

Chase Companies, Waterbury, Conn., are to open branch warehouses in Boston, which will serve as a distributing center to other points, such as Canada and southern and foreign points.

* * *

Trumbull Electric Mfg. Co., Plainville, Conn., has bought the Post-Glover Co., Ludlow, Ky., and will operate it as an additional unit to the main plant at Plainville.

* * *

Parker Stamp Works Inc., Hartford, Conn., has consolidated its New Britain, Conn., branch with the Hartford plant, thereby enlarging and making more efficient its production facilities.

* * *

Atlas Mfg. Co., manufacturer of knives, spoons, thimbles, hooks and other metal staples, New Haven, Conn., has bought the Ansonia Novelty Co. of Ansonia, Conn.

* * *

Lundoff-Bicknell Co., Chicago, industrial engineer, State-Lake building, will remove to the Michigan-Lake building on its completion, occupying the twenty-second floor.

* * *

E. J. Lavino & Co., Philadelphia, ferroalloys, refractories, and ores, has enlarged its Pittsburgh headquarters, removing from 509 to 510 and 511 Oliver building. Harbour Mitchell is resident manager.

* * *

H. H. Bell Co., dealer in iron and steel, has established a warehouse and office at 426 Greenwich street, New York, with a stock of spring and tool steel. Mr. Bell formerly was manager for A. R. Purdy Co. Inc.

* * *

Parker Motor Truck Service Co., 606 Linus street, Milwaukee, has changed its name to Parker Truck Co. Inc. and will resume production of motor trucks. The company has been operating simply as a service organization since the death of W. H. Parker. Control has been bought by J. Grossman.

* * *

Central Wheel Co., Muskegon, Mich., manufacturer of automobile wheels, has been reorganized, increased capital from $60,000 to $100,000 and output will be enlarged. Frank E. McKee, formerly general manager for Campbell, Wyant & Cannon Foundry Co., is president of the new organization.

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

BIRMINGHAM, ALA.—Birmingham Ornamental Iron Co. has been incorporated with $14,000 capital to manufacture ornamental iron fixtures by E. B. Irwin, president, and Grady G. Ashcraft secretary and treasurer.

BIRMINGHAM, ALA.—Joubert & Goslin Machine & Foundry Co., manufacturer of sugar refining equipment, has had plans made for an extension to enlarge its production of evaporating and drying equipment for chemical plants.

NORTH BIRMINGHAM, ALA.—Alabama Foundry Co. is building a 1-story foundry for iron and steel castings adjoining the plant of the Davis Pipe & Fittings Co., which has been acquired and is being refitted for use.

INGLEWOOD, CALIF.—Krochler Mfg. Co. has let contract to Wimter Construction Co., Los Angeles, for a 3-story plant 170 x 200 feet at Redondo boulevard and Damask street.

ALHAMBRA, CALIF.—Kay Steel Wheel Co. is building a foundry 85 x 200 feet, with other units to follow.

LOS ANGELES—Union Iron Works, 5125 Santa Fe avenue, is building a fabricating plant 153 x 450 feet. R. P. Miller is general manager.

SAN FRANCISCO—United States Metal Products Co., 330 Tenth street, will build a 1-story plant from plans by Theodore W. Lenzen, 785 Market street, architect.

DENVER—American Ball Mill Co. has been incorporated with $250,000 capital by R. P. Jugal, T. A. Chisholm and R. S. Watson.

DENVER,—National Magnetic Pick-Up Co. has been incorporated with $50,000 capital by R. P. Ralston, J. P. Hagaman and L. A. Dick.

BRIDGEPORT, CONN.—Grant Mfg. & Machine Co., Sillman avenue, will build a plant 40 x 63 feet.

BRISTOL, CONN.—New Departure Mfg. Co., a subsidiary of General Motors Co., has bought a 5-acre tract for expansion.

HARTFORD, CONN.—Charles H. Abbott Inc. has been incorporated to manufacture steel ball bearings and burnishing materials, by Charles H. Abbott, Albert C. Bill and Albert S. Bill.

HARTFORD, CONN.—Sterling Stop Watch Co. Inc. has been incorporated with 2500 shares no par value to manufacture timing devices by Fred Weber, Meriden, Conn., Thomas Pastor, Waterbury, Conn., Benjamin Webster, New York.

NAUGATUCK, CONN.—The Eastern Malleable Iron Co. will build a new foundry here at an approximate cost of $82,000. New modern equipment will be installed.

NEWTON, CONN.—Newton Feldspar Co. Inc. has been incorporated with $25,000 capital to produce feldspar and its derivitives by Cornelia M. Hawley, Henry S. Young and Ernest G. Hawley, Newton, Conn.

WILMINGTON, DEL.—Superior Copper Products Co. has been incorporated with $110,000 capital to manufacture copper products. Corporation Trust Co. of America is attorney.

CHICAGO—H. G. Fischer Co., 2355 Wabansia avenue, is building a 2-story plant 53 x 109 feet for the manufacture of optical instruments.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

CHICAGO—Pyle National Co., 1334 North Kostner avenue, is building a 1-story plant 22 x 61 feet for the manufacture of street car and locomotive headlights.

CHICAGO—O. D. Jennings Co., 4239 West Lake street, manufacturer of coin machines, will build a 2-story plant 32x56 feet from plans by I. C. Saxe, 351 Belden avenue, architect.

CHICAGO—Anchor Welding Service Inc., 4715 West Chicago avenue, has been incorporated with $2000 capital by George W. Hettrick, Arthur J. Jacobsen, E. A. Hettrick and A. Jacobsen. Bassler, Bippus & Rose, 134 North LaSalle street, are correspondents.

CHICAGO—All-Metal Radiator Cover Co., 19 South Wells street, has been incorporated with $3000 capital to manufacture metal radiator covers by Linnea Rydell, Joseph D. Iross and George J. Massey. William Arthur Anderson, 105 West Monroe street, is attorney.

CHICAGO—William Ekenberg Sons Inc., 4836 North Linder avenue, has been incorporated with $2000 capital to manufacture automotive bodies, wheels and accessories by Walter Ekenberg, Edward A. Ekenberg and William Ekenberg. Joseph Bonnefoi, 717 Chicago Temple building, is attorney.

CHICAGO—Kelly Interior Crafts Co., 2007 Blue Island avenue, has been incorporated with $10,000 capital to manufacture interior fixtures and furniture of metal and wood by Joseph Kaszab, John I. Kelly and Edgar L. Kelly. Nelson & McFall, 105 South LaSalle street, are attorneys.

CHICAGO—Polack Hardware Co., 155 North Clark street, has been incorporated with $15,000 capital to manufacture metal window frames and sashes and hardware by Isadore J. Polack, Mark Salomon and Louis Suekoff. Altheimer & Mayer, 10 South LaSalle street, are attorneys.

HOOPESTON, ILL.—Green Bros, Inc. has been incorporated with $50,000 capital to operate a machine shop by William S. Green, Lucy F. Green and Herbert J. Green, 218 West Main street.

INDIANAPOLIS—Thomas & Skinner Steel Products Co., Harmon and Empire streets, manufacturer of precision equipment, J. R. Thomas president and O. H. Skinner secretary, has bought plant of Pioneer Brass Works, 150x185 feet, and will move plant there and install additional equipment.

MARION, IND.—Superior Body Works, 1919 South Branson street, J. B. Sisson general manager, will build and equip a 1-story addition.

SOUTH BEND, IND.—W. and C. Loutz Estate is building a 2-story machine and repair shop 61 x 90 feet at Michigan and South streets.

BOSTON—J. J. Shannon Co. has been incorporated with 500 shares no par value to manufacture machinery and tools by Oliver A. Wyman president and treasurer, Alphonso A. Wyman and Helen E. Moisan.

GARDNER, MASS.—E. W. Pierce & Chesworth Inc., manufacturer of machinery, E. W. Pierce president, will build a 3-story plant 42x111 feet.

WALTHAM, MASS.—Waltham Grinding Wheel Co., 115 Bacon street, is building a 1-story addition 50x75 feet.

WORCESTER, MASS.—American Steel & Wire Co., Clinton S. Marshall manager, is building a 2-story addition 65x208 feet to its shipping department and a 1-story addition 64x840 feet to its electric cable department.

DETROIT— Peninsular Stove Co., Fred Moran president, Trumbull and Fort streets, is planning a new plant for erection early in 1927.

DETROIT—P. J. P. Tools Corp. has been incorporated with $10,000 capital to manufacture tire removers and automobile accessories by Peter J. Platte, 14801 East Jefferson street, John Bodenna and William G. Peters.

DETROIT—V-R Fuel Pump Corp., 40 West Milwaukee avenue, has been incorporated with $50,000 capital and 2500 shares no par value, G. A. Maher president, and is manufacturing its electrical fuel pump.

ECORSE, MICH.—National Smelting & Refining Co., Harry Grevnin secretary and treasurer, 1842 Livernois street, Detroit, will build two 1-story factory buildings, 60 x 200 feet and 70 x 150 feet on Jefferson avenue. Murphy, Burns, 3456 Cass street, are engineers.

HOWELL, MICH.—Howell Electric Motors Co., C. F. Norton, manager, will build a 1-story plant 40 x 200 feet.

ALBERT LEA, MINN.—American Gas Machine Co. will build first unit of its plant at once, 100x280 feet, at Front and Madison streets. John F. Hanson has been given contract. Further units will be added later.

EAST ORANGE, N. J.—United States Key Bolt Co. has been incorporated with 1000 shares no par value to manufacture iron and steel devices. New Jersey Registration & Trust Co., East Orange, N. J. is correspondent.

JERSEY CITY, N. J.—Kant-Dack Corp. has been incorporated with $80,000 capital and 200 shares no par value by Henry S. Cannon, Edward Bonn, and John J. Dolan, Jersey City. James Dowan, Jersey City, is attorney.

NEWARK, N. J.—Manufacturing Device Corp. 320 Thomas street, will build a 1-story machine shop.

NEWARK, N. J.—F. Storsberg Co., 22 Atlantic street, gas and electric fixtures, will move to 88 Washington street where it is equipping structure for its production.

NORTH PLAINFIELD, N. J.—Pepo Oil Burning Equipment Co. has been incorporated with $100,000 capital to manufacture oil burning equipment by George R. Perry, Lewis Pomponi and Mary Perry. Emil J. Hoos, Plainfield, is attorney.

PASSAIC, N. J.—Passaic Metal Ware Co., Brook avenue, I. W. England president, has

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, f.o.b. cars Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	10.00 to 11.00
North African low phosphorus	9.25 to 9.75
Swedish and Norwegian low phosphorus, 68 per cent	10.25 to 10.75
Swedish foundry or basic, 66 to 68 per cent	9.00 to 9.50
Spanish foundry or basic, 50 to 54 per cent	8.75 to 9.25
North African foundry and basic 50 to 54 per cent	8.50 to 9.50

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian, minimum, 47 per cent, 32 to 35 cents	
Indian, minimum 47 per cent	32 to 35 cents
Caucasian, 53 to 55 per cent Washed	nominal

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$17.50 to 18.00
Washed gravel, imported duty paid eastern tidewater, per ton	16.50 to 17.75

let contract to the Austin Co. for a 2-story addition 80x100 feet.

PATERSON, N. J.—Automotive Service Corp. has been incorporated to manufacture oil heaters with 2500 shares no par value by Evelyn Lamansky, Rosalind Berkowitz, Abe Berkowitz, Abe Jaffe, Paterson. Peter Cohn, Paterson, is attorney.

ALBANY, N. Y.—Home Comforts has been incorporated with $20,000 capital to manufacture heaters by R. C. Poskanzer, A. H. Newton and N. B. Silberg. Muhlfelder & Illch, Albany, are attorneys.

BROOKLYN—Chantrell Holding Corp. has been incorporated with $10,000 capital to manufacture hardware by M. S. Brekoff, and P. Clatstein. S. Fish, 105 Court street, is attorney.

BROOKLYN, N. Y.—F. Wesel Mfg. Co., 70 Cranberry street, manufacturer of printing and electrotyping machinery and equipment, will build a 1-story plant 200x500 feet at Scranton, Pa. Lockwood, Greene & Co., 100 East Forty-second street, are engineers.

BROOKLYN.—Segal Lock Co., which recently purchased property on Ferris, Sullivan and Wolcott streets, will start work shortly on three factory buildings, costing $500,000. These will be in addition to two large factory buildings and a machine shop and foundry now on the property and having a floor area of approximately 160,000 square feet. Upon completion of the improvements around March 1, the company will move its two plants from Connecticut and also its warehouses from New York.

BUFFALO — Pratt & Letchworth Co., 189 Tonawanda street, malleable castings, will build a 1-story addition.

BUFFALO—Niagara Falls Smelting & Refining Corp., 2204 Elmwood avenue, is taking bids for an addition to its main smelting plant 50 x 100 feet and a machine for briquetting metals 4 x 4 x 11 inches.

ELMIRA, N. Y.—Elmira Foundry Co., James D. McCann president, has let contract to Lowman Construction Co., 312 Railroad avenue, for alterations and an addition to its plant.

LONG ISLAND CITY, N. Y.—Universal Gypsum Co., A. H. Althuff, 111 West Washington street, Chicago, in charge, is considering plans for a plant on Newton creek.

NEW YORK—Siemund Marine Electric Welding Co., 29 Broadway, will build a 2-story building 23 x 85 feet at 426 Washington street. Henry L. Siemund is president.

NEW YORK—Sword Silent Oil Burner Corp. has been incorporated with $5000 capital by R. Rehm, U. Rehm and P. F. Fearon. H. H. Livingston, Rockaway Park, N. Y., is attorney.

NEW YORK—Toledo Tantalum Corp. has been incorporated with $20,000 capital to manufacture radio vacuum tubes by I. J. Hallenbeck, and M. A. Disalvo. C. J. Holland, 350 Madison avenue, is attorney.

NEW YORK—DeLuxe Fixture Importation Co. has been incorporated to manufacture lighting fixtures with $500 capital by S. Witte, and A. Stoll. L. A. Shapiro, 1540 Broadway, is attorney.

NEW YORK—Esco Mfg. Co. has been incorporated with $15,000 capital to manufacture lamps and novelties by E. Sperling, S. S. Kempner and B. B. Baer. S. I. Golieb, 1440 Broadway, is attorney.

NEW YORK—Premulgor Corp. has been incorporated with 1000 shares no par value to manufacture electrical appliances by A. E. Mathews, T. J. MacKinnon and W. E. Courian. A. T. Schmidt, 149 Broadway, is attorney.

NEW YORK—Salvage Process Corp. has been incorporated with $500,000 capital and 13,000 no par value by R. Bennett Jr., C. S. Winters and B. G. Brennan. Wing & Russell, 14 Wall street, are attorneys.

NEW YORK—Meridian Steel Corp. has been incorporated with $100,000 capital by J. B. Lee, D. J. Hetchner and L. M. Rosenthal. M. Hetchner, 225 West Thirty-fourth street, is attorney.

NEW YORK—Permanent Grate Mfg. Co. has been incorporated with $20,000 capital to manufacture boiler grates by S. Dressel, E. Gelduld and L. Glaser. M. Freed, 46 West Forty-sixth street, is attorney.

NEW YORK—Metropolitan Silent Automatic Corp. has been incorporated to manufacture oil burners, with $100,000 capital and 10,000 shares no par value by W. W. Ahrens, O. A. Stumpe, and A. F. Bernuth. Rearick, Dorr, Travis & Marshall, 61 Broadway, are attorneys.

NEW YORK—Tech Engineering Co. has been incorporated with $10,000 capital and 1000 shares no par value to manufacture radio equipment by D. Bensel, A. P. Cunningham and W. H. Caldwell. F. J. Brown, 36 West Forty-fourth street, is attorney.

NEW YORK—Kean Mechanical Invigorators has been incorporated with 4000 shares no par value to manufacture electrical horses by G. A. Keane, H. C. Moses and B. Casper. Moses, Nehrbas & Tyler 299 Broadway, are attorneys.

SYRACUSE, N. Y.—Equator Furnace Co. has been incorporated with $100,000 capital to manufacture heating apparatus by D. W. Norris, B. C. Taylor and D. H. Kinnan. Estabrook & Estabrook, Syracuse, are attorneys.

DURHAM, N. C.—Liggett & Myers Tobacco Co. will build an electric powerhouse, steam driven to supply its entire plant. Lockwood, Greene & Co., 100 East Forty-second street, New York, are engineers.

FAYETTEVILLE, N. C.—Coniffee Clement Supply Co. has been incorporated to manufacture electrical machinery with $25,000 capital by J. F. Coniffee and C. L. Clement.

CANTON, O.—Timken Roller Bearing Co. has given general contract to G. F. S. Melbourne Co. for a plant 100 x 500 feet.

CINCINNATI—Tool Steel Gear & Pinion Co., Elmwood Place, L. N. Garch president, has let contract to William Miller & Son, 2017 Elm street, for a 2-story addition 25x80 feet. Tietig & Lee, Mercantile building, are architects.

CLEVELAND—Elwell Parker Electric Co., 4502 St. Clair avenue, has let contract to Boldt Construction Co., 1969 East Seventieth street, for a 4-story addition 40 x 120 feet.

CLEVELAND—Park Drop Forge Co., 750 East Seventy-ninth street, has let contract to George A. Rutherford Co. for an addition to its plant.

CLEVELAND—Art In Bronze Co., 1782 East Thirty-seventh street, will build a foundry 34 x 125 feet at Chester and East Forty-third street.

CLEVELAND—Cleveland Tool & Engineering Co. has been incorporated with $100,000 capital by C. E. Walling, C. W. Mader, L. Bloomfield, S. L. Orr, Lewis Bricker.

CLEVELAND—Leece-Neville Co., 5363 Hamilton avenue, S. M. Neville president, will build a 2-story addition 43 x 100 feet for the manufacture of electric starting and lighting equipment.

CLEVELAND—Sterling Mfg. Co., 2845 Prospect avenue, has leased 2-story plant of 18,000 square feet at 4827 Lexington avenue, and will equip it for manufacture of radio and electrical testing devices.

CLEVELAND—Fisher Body Co. will build an addition to its office building 50 x 190 feet, build a warehouse for inflammable liquids 50 x 400 feet, an addition to its press shop 80 x 120 feet, two wings to main plant and an additional boiler and supply house.

CLEVELAND—F. J. Mullaney has given contract to H. K. Ferguson Co., 4900 Euclid avenue, Cleveland, for a 1-story building, designed for additional story, 133 x 181 feet

for office and warehouse to be occupied by American Radiator Co.

DAYTON, O.—Metallurgical Corp. has been incorporated with 1000 shares no par value by R. A. Herbruck, P. D. Schenck, R. F. Schmidt, M. L. Belcher and R. D. Daniels.

ELMWOOD PLACE, O.—Tool Steel Gear Pinion Co., L. N. Gatch president, Township avenue has let contract to William Miller & Son., 2017 Elm street, Cincinnati, O., for a 2-story addition and alterations to its plant, 25 x 77 feet.

ST. BERNARD, O.—St. Bernard Mfg. Co. has let contract to H. K. Ferguson Co., 4900 Euclid avenue, Cleveland, for a complete plant, including foundry 105 x 233 feet, with mezzanine 20 x 45 feet and 2-story cupola section 40 x 52 feet, 1-story storage building 46 x 192 feet and a 2-story office building 16 x 34 feet.

TOLEDO, O.—Standard Electric Stove Co., S. L. Kelly, president, Twelfth and Smith streets, is having plans made for a new plant on Oakwood avenue and Hawthorne street. Present plant to be razed.

CHESTER, PA.—American Locomotive Co., L. S. Carroll in charge, 30 Church street, New York, has let contract to F. K. Worley Construction Co., 1701 Arch street, Philadelphia, for a 1-story repair shop 70 x 85 feet.

HAZLETON, PA.—Benjamin Auto Parts Inc., 19 West Hemlock street, has let contract to Ralph H. Woelfel, Markle Bank building, for a 1-story shop building 70 x 80 feet at Pine and Maple streets.

McKEESPORT, PA.—Columbiana Foundry Co., Walnut street, manufacturer of radiators, F. Tho. Nason president, J. T. McLane vice president, will build additions to its plant to increase production.

PHILADELPHIA—Smith, Drum & Co., Allegheny avenue, will build a 2-story addition to its machine shop.

PHILADELPHIA—The Leeds & Northrup Co., Forty-ninth and Stenton streets, has awarded a contract to William R. Dougherty for a plant addiiton.

PHILADELPHIA.—A $6000 boiler house will be erected by William F. Lotz, Oxford Bank building, contractor, for Schletter & Zander, Decator and Tulip streets.

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

Pennsylvania, No. 1	$40.00 to 43.00
Pennsylvania, No. 2	35.00 to 38.00
Ohio, No. 1	40.00 to 43.00
Ohio, No. 2	35.00 to 40.00
Illinois, No. 1	40.00 to 43.00
Illinois, No. 2	35.00 to 38.00
Kentucky, No. 1	40.00 to 43.00
Kentucky, No. 2	38.00 to 40.00
Missouri, No. 1	40.00 to 43.00
Missouri, No. 2	35.00 to 38.00
Maryland, No. 1	40.00 to 45.00
Maryland, No. 2	36.00 to 40.00
Georgia and Ala. No. 1	40.00 to 45.00
Georgia and Ala. No. 2	30.00 to 35.00

SILICA BRICK

Pennsylvania	40.00 to 43.00
Chicago	49.00 to 52.00
Birmingham	48.00 to 62.00

MAGNESITE BRICK

Per Net Ton Seaboard Base

9 x 4½ x 2½	65.00 to 70.00

CHROME BRICK

(Per Net Ton)

9 x 4½ x 2½	45.00 to 50.00

PHILADELPHIA.—Work will be started shortly by the Philadelphia Gear Works on a $200,000 building at Richmond and Tioga streets. Horace W. Castor is architect.

PHILADELPHIA.—A power plant will be erected for the Philadelphia Electric Co. at Ninth and Willow streets, from plans by John T. Windram.

PHILADELPHIA.—Work will be started shortly on a factory building for Greenberg & Sandler, 105 Kenilworth street, from plans by H. H. Kline.

PHILADEDPHIA—The Craftex Mills, Venango street, near Kensington, has closed bids on a factroy building. Amos W. Barnes is architect.

PHILADELPHIA—Contract has been awarded by the Otto Engine Works for a 1-story brick and steel factory building on a 150 x 260-foot site at Rhawn street and State road, Holmesburg, near here. Plans are prepared by the William Steele & Sons Co.

PHILADELPHIA.—Work will be started shortly by Smith, Drum & Co. on a machine shop addition at Fifth street and Allegheny avenue. Clarence E. Wunder, architect, has completed plans for a plant addition for the Wiedemann Machine Co., 1815 Sedgley avenue.

PHILADELPHIA—Fretz Brass & Copper Co. has been incorporated with $50,000 capital to manufacture fabricated brass, copper and other metals and articles made from them, by Samuel Stauffer Fretz, 157 Easton road, Glenside, Pa., Frank Howard Fretz, Glenside, Pa., and Harry Klingler, 1543 North Edgewood street, Philadelphia.

PHILADELPHIA—Peerless Springs Inc. has been incorporated with $35,000 capital to manufacture springs and hardware for furniture, seats and upholstery and tools and dies for their manufacture by Coates E. Landell, Church and Radnor road, Bryn Mawr, Pa.; Walter Kiwi, 4342 Reno street, Philadelphia and Alfred I. Reese, 13 Central avenue, Bryn Mawr, Pa.

PITTSBURGH—National Casket Co., F. B. Heintz president, Oliver building, will build a 2-story office building 50 x 60 feet.

PITTSBURGH—National Tube Co. has contracted for a brick laboratory building at 4910 Forbes street, adjoining the bureau of mines building.

PITTSBURGH—R. L. R. Roller Bearing Co. has been incorporated with $25,000 capital to manufacture roller bearings for automobile and car wheels and machinery by E. B. Rhodes, 1934 Chislett street, Pittsburgh, F. W. Rudolph, 2999 West Liberty avenue, Dormont, Pa., and W. A. McCoy, 7435 Monticello street, Pittsburgh, Pa.

MOBRIDGE, S. DAK.—Bids will be received by R. C. Riddell, city auditor, until Oct. 4, for a motor and pump with a capacity of 500 gallons per minute against a head of 104 feet.

CHATTANOOGA, TENN.—American Hoist Corp., Hamilton National Bank building, O. B.

Where Machinery Exports Went in July

	Lathes			Drills				Pneumatic			Shapers	Metal	Milling	Mach.
	Engine	Turret	Other	Vertical	Radial	Sensitive	Other	Gear Cutters	Portable Tools	Planers	and Slotters	Sawing Cutting	Knee Column	Other
Austria	..	..	..	..	..	..	14	..	..	..	..	..	..	..
Belgium	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Czechoslovakia	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Russia	..	..	..	..	..	1	..	..	81	..	..	..	12	1
France	..	6	..	..	..	..	1	3	23	..	..	..	4	6
Germany	..	..	..	2	..	..	..	6	33	..	..	..	..	2
Italy	..	..	..	..	..	..	1	2	16	..	..	2	..	..
Netherlands	..	..	..	..	..	2	..	..	15	..	2	..	..	1
Spain	..	..	..	..	..	..	..	..	19	..	..	..	..	..
Sweden	..	2	1	..	..	..	..	..	..	..	..	..	1	..
United Kingdom	1	..	8	2	..	3	..	3	327	..	4	2	12	11
Canada	1	1	12	..	1	12	12	..	106	1	2	1	3	2
Costa Rica	..	..	..	..	..	..	..	..	3	..	..	12	..	..
Mexico	..	..	2	..	..	2	..	..	8	..	..	1	..	..
Cuba	1	..	25	..	..	1	..	..	77	..	1	..	..	..
Argentina	..	..	..	..	..	..	..	..	9	..	..	..	..	..
Colombia	..	1	1	..	..	..	..	..	4	..	..	2	..	..
Brazil	2	..	2	..	..	..	11	..	16	..	1	..	..	..
British India	..	..	1	..	..	..	1	..	81	..	..	1	..	..
China	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Japan	..	..	1	10	..	..	11	..	101	1	1	..	3	1
Philippine Islands	1	..	2	..	..	..	..	1	2	..	..	..	..	..
Australia	..	..	12	2	..	3	3	2	274	..	4	..	..	..
New Zealand	..	..	..	..	..	..	4	..	24	..	..	..	..	..
British S. Africa	..	..	..	..	..	1	..	..	28	..	..	..	..	..
Other countries	6	..	4	1	1	3	4	..	20	..	1	2	..	1
Totals, July	12	11	71	17	2	28	62	19	1,269	2	16	23	35	25
June	14	10	59	24	1	105	85	6	..	3	20	19	30	18
May	14	17	41	44	8	281	81	12	..	..	23	22	11	22
April	25	11	41	28	7	34	314	16	..	111	33	19	104	75
March	6	9	75	46	5	122	92	22	..	..	34	16	14	43

Gladish manager, is planning additions to its plant and installation of additional equipment.

CHATTANOOGA, TENN.—National Metal Products Co., Twelfth and Carter streets, C. D. Martin president, is building a 2-story plant, one unit 100 x 100 feet and the other 60 x 100 feet, at Twenty-fifth and Carter streets. Present plant to be devoted to warehouse purposes.

KNOXVILLE, TENN.—Tennessee Armature & Motor Works has been incorporated with $15,000 capital by William Gardner Hoffman, 717 North Fourth avenue, and others.

DALLAS, TEX.—Southern Nipple Mfg. Co. has been incorporated with $10,000 capital to manufacture nipples and other fittings by C. J. Farwell, 4921 Crutcher street, K. R. Farwell and Verlie Athey.

Business in Canada

EDMONTON, ALTA—The Western Canada Pulp Co. proposes to build a factory here to cost $50,000.

VANCOUVER, B. C.—Holden Foundry Co. Ltd., 232 Southern street, has been incorporated with $50,000 capital.

BLENHEIM, ONT.—Rutherford Milling Co. is having plans prepared for flour mill and elevator here to cost $100,000. The company is interested in equipment.

BRIDGEPORT, ONT.—The cooperage shop here owned by Shirk and Snider was damaged by fire with loss of $10,000.

CHATHAM, ONT.—Public utilities commission has authorized the purchase of starting transformer for the 60-cycle equipment. C. D. Sulman is chairman.

FORT WILLIAM, ONT.—N. M. Paterson & Co., Yonge and Montreal streets, will let subtrades in connection with machine shop and warehouse to be erected here at a cost of $10,000. Machinery and tools will be purchased.

GANANOQUE, ONT.—Disher Steel Construction Co., 30 Commissioner street, Toronto, Ont., has been awarded steel contract in connection with $50,000 addition to plant of the Skinner Co., Ltd., here.

SAULT STE. MARIE, ONT.—Spanish River Pulp & Paper Mills, Ltd., has started work on addition to mills here to cost $700,000. Work includes extensions to mill, rebuilding of boiler house, instalation of two steam turbine generators, two electric grinders, etc.

WEBBWOOD, ONT.—The plant of the Webbwood Engineering Co. was damaged by fire with loss to building and equipment of $12,000.

WELLAND, ONT.—The Joseph Stokes Rubber Co. is building a plant addition to cost $50,000.

COATICOOK, QUE.—City council contemplates building a dam and power plant on the watercourse of the river running through the city.

MONTREAL, QUE.—City council voted $19,750 for the purchase of a steam crane. H. A. Terreault is director of public works.

MONTREAL, QUE.—The Johnson Wire Works, 50 Dagenais street, has awarded a number of contracts in connection with addition to its plant here to cost $30,000.

RAWDON, QUE.—The local plant of the Quebec Southern Power Corp. will be replaced by a structure of concrete and steel design to produce 8000 horsepower. The first unit of 2800 horsepower will be installed immediately. The cost of the proposed plant is estimated at $600,000.

ROUYN, QUE.—The Canadian Bridge Co., New Birks building, Montreal, Que., has been awarded contract for structural steel work in connection with smelter to be erected here at a cost of $1,000,000 for the Noranda Mines & Copper Corp., Ltd., Keefer building, Montreal.

New Trade Publications

BELTING—A booklet by the Cleveland Oak Belting Co., Cleveland, covers the subject of industrial belting and contains a fund of engineering data relating to the subject.

SPEED REDUCERS—Application of its standardized speed reducers to various purposes is made plain in a bulletin by the Boston Gear Works Sales Co., Norfolk Downs, Mass. It is well illustrated.

HARDWARE—Allith-Prouty Co., Danville, Ill., has issued a catalog of its products. It is arranged with various types of hardware in sections, with details of application of the various classes.

LATHES—A folder by the Cincinnati Lathe & Tool Co., Oakley, Cincinnati, O., calls attention to its line of tools and illustrates details of construction making for efficient machines.

SILICA SAND—Use of silica sand in making cores for foundry use is treated in a pamphlet by the Standard Silica Co., Chicago. It is illustrated by several graphs showing various properties of the cores. Test data also are presented in tabular form.

WIRE-WORKING MACHINES—Flattening machines and mills for production of flat, square and shaped wire are illustrated and described in bulletins by the Blake & Johnson Co., Waterbury, Conn. Standard specifications are given.

INSULATING BRICK—A bulletin by the Celite Products Co., Los Angeles, describes four types of brick produced by this company, adapted to various ranges of temperature and uses. It is illustrated to show proper method of using in various installations.

OIL-ELECTRIC LOCOMOTIVE—Development of American railway motive power, leading up to the recent advent of the oil-electric locomotive is sketched in a booklet by the Ingersoll-Rand Co., New York. In fact, the book describes transportation from the days of the saddle horse. Advantages of the oil-electric locomotive are sketched and economies of operation indicated, with some discussion of its potential effect on railroading in America.

CONCRETE MIXTURE—A method and material that produces by surface treatment hardened concrete floors in colors is described in a bulletin by the Master Builders Co. Cleveland. Specifications for its use are given.

GEARS—A data book of gears has been issued by Foote Bros. Gear & Machine Co., Chicago, covering many problems met in gear work. It includes design and application of gears and speed reduction units and information on mechanical engineering usbjects.

TRUCKS AND TRACTORS—Four bulletins have been issued by the Automatic Transportation Co., Inc., Buffalo, covering its elevating platform truck, tiering-lifting truck, three wheel tractor and locomotive crane truck. Specifications for each type are given.

HOISTS—Wright Mfg. Co., Lisbon, O., has issued a comprehensive catalog of its chain hoists, trolleys, hand cranes and allied equipment. It is illustrated with halftones and line drawings giving dimensions and clearances of its products. It is of value to engineers, architects and superintendents.

GRINDING MACHINERY—Machinery Co. of America, Big Rapids, Mich., has issued a bulletin covering its automatic band saw sharpener, involving a new timing designed to increase efficiency of grinding action. It is illustrated to show construction and operation of the new type of machine.

CORE AND MOLD OVENS—A catalog has been issued by the Foundry Equipment Co., Cleveland. It discusses various fuels for core and mold oven operation and then proceeds to description of various types of ovens from the standpoint of adaptability to differing classes of work. A discussion of dry sand mold practice is included, being regarded as an important development from present conditions in foundry work. Illustrations are of actual installations.

POWER RECTIFIERS—Mercury-arc power rectifiers with manual or automatic control are described in a circular by the American Brown Boveri Electric Corp., Camden, N. J. Diagrams and halftones illustrate the installation, performance and wiring of these devices, while the text discusses their application.

DROP PIT TABLES—A catalog has been issued by the Whiting Corp., Harvey, Ill., describing and illustrating its electric drop pit table for car and locomotive shops. Construction and operation are shown in illustrations and various applications to shop work are listed, with time required for their completion.

HEAT TREATMENT—A bulletin by the Stanley P. Rockwell Co., Hartford, Conn., gives an explanation why steel cracks in heat treatment, due to the difference of condition in the outer and inner portions. Application of methods of heat measurement to equalize temperature throughout the piece is described.

ELECTRIC HOISTS—A catalog has been issued by the American Engineering Co., Philadelphia, covering its various devices and including six new sizes recently added to its line. This carries the range to 24,000 pounds capacity. The catalog covers four distinct classes, each with four to six sizes, with various types of suspension and control. It is fully illustrated by halftones and diagrams.

TURBO COMPRESSORS AND BLOWERS—A descriptive circular covering its compressors and blowers has been issued by the American Brown Boveri Electric Corp., New York. It covers the general subject of blowing and compression, regulation, and then describes the construction and operation of its types for various uses. The illustrations are complete and diagrams and charts serve further to illustrate the text.

Iron and Steel Production

IN GROSS TONS

Pig Iron

Compiled by IRON TRADE REVIEW

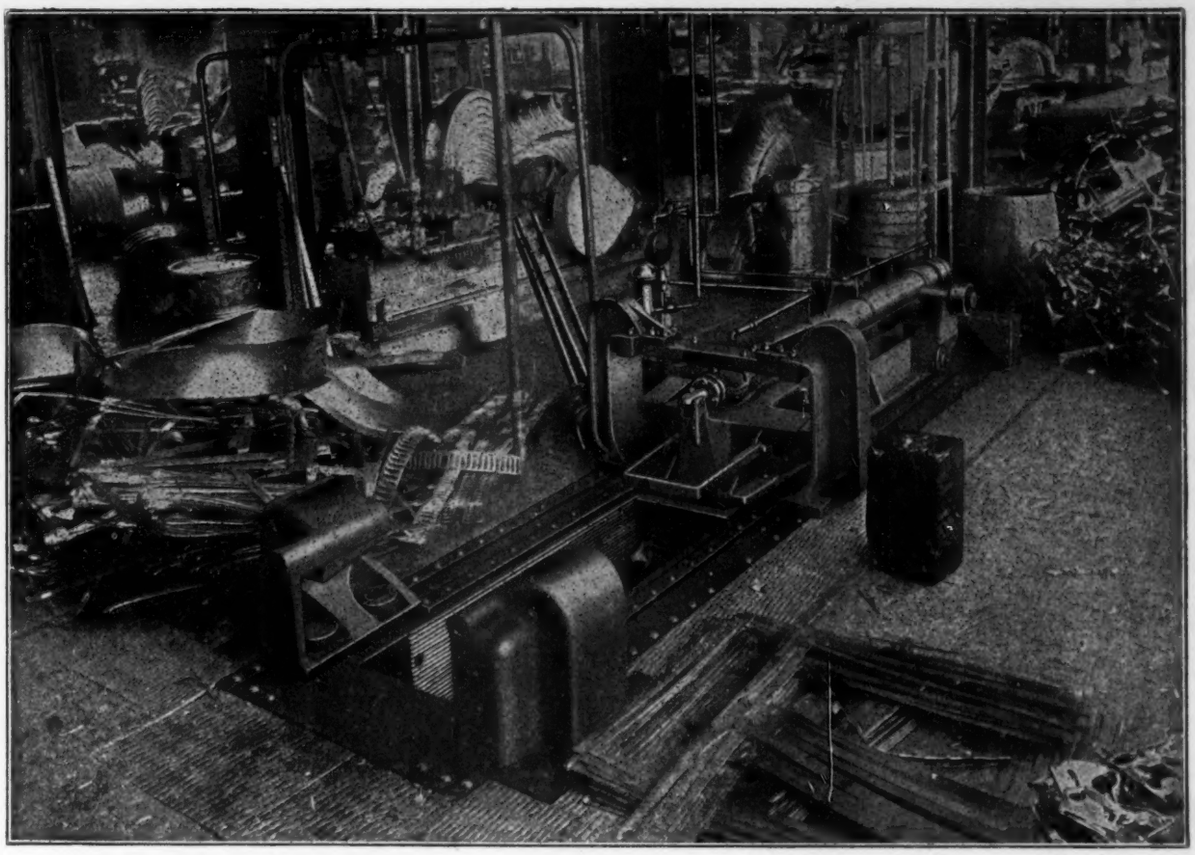
	—Stacks—		——Output——		—Stacks—		——Output——		—Stacks—		——Output——		—Stacks—		——Output——	
	No.	In	Total	Av. daily	No.	In	Total	Av. daily	No.	In	Total	Av. daily	No.	In	Total	Av. daily
			1907				1908				1909				1910	
January	376	311	2,174,801	70,155	398	139	1,081,813	34,897	406	234	1,787,473	57,683	416	311	2,599,995	83,871
February	374	308	2,047,036	73,109	401	150	1,086,809	37,476	407	233	1,682,470	60,088	417	311	2,429,525	86,768
March	377	304	2,186,709	70,539	398	154	1,229,856	39,672	406	229	1,822,024	58,793	417	310	2,588,736	83,508
April	378	327	2,226,708	74,223	398	146	1,155,122	38,504	406	224	1,731,406	57,687	418	291	2,477,700	82,590
May	391	329	2,291,030	73,904	396	145	1,168,002	37,677	407	236	1,866,757	60,218	419	279	2,374,802	76,607
June	392	341	2,237,420	74,580	395	154	1,106,300	36,876	408	240	1,929,929	64,334	420	271	2,288,279	76,276
July	396	335	2,253,243	72,685	397	166	1,228,604	39,632	409	258	2,088,620	67,375	420	254	2,158,124	69,617
August	397	329	2,243,656	72,376	399	181	1,366,019	44,065	412	278	2,232,642	72,021	422	244	2,103,791	67,864
September	399	329	2,174,148	72,471	399	189	1,416,252	47,208	413	297	2,378,655	79,201	420	234	2,048,461	68,282
October	401	314	2,359,690	17,119	400	200	1,573,824	50,764	413	309	2,589,681	83,538	421	230	2,086,205	67,297
November	398	226	1,820,558	60,685	402	212	1,582,314	52,744	414	311	2,532,740	84,425	421	218	1,910,385	63,679
December	398	154	1,234,733	39,830	403	221	1,723,664	55,602	416	314	2,682,702	86,539	421	193	1,779,899	57,416
Total			25,249,732	*69,177			15,718,579	*42,947			25,325,099	*69,383			26,845,902	*73,550
			1911				1912				1913				1914	
January	421	210	1,766,658	56,985	421	227	2,052,806	66,220	423	297	2,787,800	89,929	423	199	1,879,336	60,624
February	421	226	1,781,285	63,617	422	235	2,098,796	72,372	423	306	2,578,670	92,095	423	219	1,888,607	67,450
March	421	236	2,165,764	69,863	420	237	2,411,529	77,791	423	278	2,762,823	89,123	423	232	2,341,551	75,534
April	421	220	2,044,904	68,163	421	239	2,377,621	79,254	421	297	2,754,353	91,812	422	212	2,261,501	75,383
May	421	206	1,871,388	60,367	423	243	2,503,341	80,753	421	285	2,816,825	90,865	422	198	2,097,019	67,646
June	421	202	1,773,282	59,109	424	242	2,433,737	81,125	422	283	2,616,883	87,229	422	193	1,904,566	63,486
July	423	196	1,776,108	57,294	422	245	2,402,567	77,502	422	264	2,558,275	82,525	422	187	1,955,324	63,075
August	423	206	1,921,832	61,995	423	255	2,500,163	80,650	424	260	2,537,018	81,839	422	187	1,996,483	64,403
September	423	216	1,973,918	65,797	419	262	2,444,454	81,482	425	258	2,494,098	83,137	422	180	1,882,718	62,757
October	421	214	2,092,061	67,486	422	280	2,683,645	86,569	425	244	2,539,924	81,933	422	162	1,767,227	57,007
November	421	214	1,999,100	66,637	423	289	2,639,562	87,985	424	225	2,229,960	74,322	421	150	1,501,269	50,042
December	422	215	2,032,301	65,558	423	291	2,777,292	89,590	424	191	1,976,138	63,746	421	154	1,495,325	48,236
Total			23,198,601	*63,558			29,325,513	*80,124			30,652,767	*83,980			22,970,926	*62,934
			1915				1916				1917				1918	
January	421	165	1,591,024	51,323	421	304	3,171,878	102,319	422	310	3,159,839	101,930	435	294	2,403,227	77,523
February	421	179	1,666,592	59,521	421	312	3,078,548	106,157	422	317	2,649,935	94,641	435	319	2,318,242	82,723
March	421	190	2,046,280	66,009	422	315	3,327,630	107,343	423	331	3,255,813	105,026	438	338	3,209,996	103,548
April	421	197	2,114,518	70,484	422	320	3,225,496	107,517	425	333	3,328,061	110,936	437	351	3,273,355	109,112
May	421	207	2,255,157	72,747	423	321	3,364,584	108,535	425	340	3,413,677	110,119	437	360	3,451,884	111,351
June	421	221	2,369,932	78,998	423	325	3,213,818	107,127	427	347	3,260,234	108,675	437	353	3,316,148	110,538
July	421	234	2,563,311	82,687	419	316	3,221,127	103,907	429	351	3,337,442	107,659	437	364	3,408,584	109,954
August	421	246	2,774,825	89,510	419	317	3,197,838	103,156	431	357	3,238,970	104,483	439	371	3,378,479	108,983
September	420	266	2,834,342	94,478	419	326	3,208,041	106,935	431	342	3,140,742	104,691	438	364	3,413,223	113,774
October	420	276	3,120,340	100,656	419	328	3,508,180	113,167	433	354	3,296,286	106,332	437	364	3,482,392	112,335
November	421	285	3,035,235	101,174	420	322	3,317,805	110,593	434	344	3,198,597	106,620	437	360	3,347,944	111,595
December	421	295	3,201,605	103,278	422	309	3,184,178	102,715	435	321	2,885,380	93,077	435	351	3,434,114	110,778
Total			29,573,161	*81,022			39,019,123	*106,609			38,164,976	*104,561			38,437,488	*105,308
			1919				1920				1921				1922	
January	435	330	3,306,279	106,654	432	285	3,012,373	97,172	436	184	2,414,753	77,895	430	127	1,645,804	53,090
February	435	311	2,943,347	105,120	432	305	2,984,257	102,904	436	155	1,929,394	68,906	429	139	1,630,180	58,220
March	435	279	3,088,023	99,614	433	315	3,375,768	108,895	436	103	1,594,866	51,447	429	155	2,035,908	65,674
April	435	216	2,474,374	82,479	433	278	2,752,670	91,754	436	96	1,190,751	39,691	429	161	2,070,161	69,005
May	433	197	2,107,729	67,991	433	297	2,991,825	96,510	436	90	1,215,272	39,202	427	175	2,309,348	74,495
June	433	199	2,114,028	70,467	433	302	3,046,623	101,553	436	74	1,064,007	35,466	427	191	2,362,455	78,748
July	434	240	2,424,212	78,200	434	291	3,043,918	98,190	435	69	864,642	27,892	427	170	2,403,030	77,517
August	432	266	2,742,081	88,453	434	306	3,145,536	101,468	436	69	954,901	30,802	427	143	1,810,665	58,408
September	433	163	2,480,790	82,692	434	317	3,124,308	104,143	435	84	985,795	32,859	427	189	2,024,008	67,466
October	432	216	1,864,424	60,142	435	290	3,288,341	106,075	435	95	1,234,450	39,821	428	218	2,629,655	84,827
November	432	252	2,407,369	80,244	435	255	2,935,081	97,836	429	120	1,414,958	47,165	428	241	2,846,110	94,870
December	432	262	2,626,074	84,711	435	202	2,700,268	87,105	429	123	1,642,775	52,992	428	253	3,083,520	99,468
Total			30,578,730	*83,777			36,400,968	*99,456			16,506,564	*45,223			26,850,844	*73,563
			1923				1924				1925				1926	
January	428	261	3,228,226	104,136	414	248	3,015,480	97,273	411	251	3,372,207	108,781	385	225	3,319,789	107,089
February	424	278	2,993,918	106,925	414	263	3,073,619	105,987	411	256	3,214,067	114,788	382	223	2,923,850	104,423
March	424	295	3,523,595	113,664	410	269	3,465,389	111,787	410	246	3,571,422	115,207	377	235	3,458,171	111,554
April	423	311	3,546,308	118,210	410	234	3,226,107	107,537	409	221	3,211,235	107,041	376	237	3,438,805	114,627
May	423	322	3,868,486	124,790	411	187	2,619,986	84,515	405	196	2,933,907	94,642	376	229	3,477,820	112,187
June	424	322	3,667,868	122,262	411	158	2,022,836	67,427	399	191	2,679,045	89,301	372	220	3,232,478	107,749
July	418	299	3,684,677	118,860	411	145	1,783,457	57,531	396	188	2,665,262	85,976	372	217	3,224,663	104,021
August	418	270	3,448,886	111,254	411	150	1,882,986	60,741	391	192	2,707,171	87,328	372	215	3,200,723	103,249
September	418	254	3,117,526	103,917	411	174	2,053,617	68,454	387	200	2,725,885	90,862			(See Page 946)	
October	418	245	3,142,642	101,375	411	182	2,461,727	79,410	386	209	3,017,889	97,351	.....	.....	.....	.....
November	418	229	2,891,191	96,373	411	204	2,514,979	83,832	385	220	3,023,257	100,775	.....	.....	.....	.....
December	418	231	2,912,527	93,952	411	229	2,956,389	95,367	385	234	3,249,057	104,808	.....	.....	.....	.....
Total			40,025,850	*109,659			31,076,572	*84,908			36,370,404	*99,645			23,075,576	*108,846

Steel Ingots

Compiled by American Iron and Steel Institute

	Total	Av. daily	Total	Av. daily	Total	Av. daily	Total	Av. daily	Total	Av. daily
	1922		1923		1924		1925		1926	
January	1,891,857	72,764	3,841,095	142,263	3,649,913	135,182	4,193,281	155,307	4,150,469	159,633
February	2,071,772	86,324	3,471,843	144,660	3,826,246	153,050	3,752,352	156,348	3,801,776	158,407
March	2,814,667	104,247	4,066,680	150,618	4,206,699	161,796	4,194,340	161,321	4,488,362	166,236
April	2,902,240	116,090	3,963,736	158,549	3,848,466	128,787	3,583,676	137,834	4,123,941	158,613
May	3,218,794	119,215	4,216,355	156,161	2,640,034	97,779	3,454,971	132,883	3,945,336	151,744
June	3,127,775	120,299	3,767,256	144,894	2,065,676	82,627	3,204,451	123,248	3,750,653	144,256
July	2,952,806	118,112	3,531,458	141,258	1,877,789	72,223	3,084,472	118,634	3,651,055	140,055
August	2,629,256	97,380	3,695,788	136,881	2,552,891	98,188	3,420,998	131,577	4,004,583	154,022
September	2,818,261	108,395	3,356,776	134,271	2,827,625	108,755	3,489,565	134,214	.....	.....
October	3,410,265	131,164	3,577,091	132,485	3,125,418	115,756	3,888,814	144,030	.....	.....
November	3,430,309	131,935	3,134,321	120,551	3,121,149	124,846	3,902,900	156,116	.....	.....
December	3,300,416	132,017	2,863,266	114,581	3,569,251	137,279	3,970,918	152,728	.....	.....
Total	34,568,418	*111,511	43,485,665	*139,825	36,811,157	*117,984	44,140,738	*141,932	27,911,592	*154,208

*Average.



Typical Installation in Well-Known Automobile Plant

WHY SHEET-SCRAP CAN BE PROFITABLY COMPRESSED

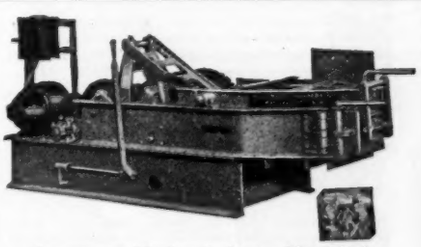
It commands at all times the best price;
It can be more conveniently stored;
It can be more economically handled;
It can be readily held for favorable markets;
It practically eliminates corrosion;
It permits of loading cars to capacity;
It saves much heat in remelting.

LOGEMANN SCRAP-METAL PRESSES

Hydraulic and Mechanical Types

LOGEMANN BROTHERS COMPANY
3126 Burleigh St. Milwaukee, Wis.

Also presses making crucible-size bricks of copper, brass, aluminum and other metals.



Logemann Mechanical-type Metal Baler

Please indicate character of scrap, quantity and heaviest gauge, when writing.

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount or $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	18

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	28	7
2½ to 6-inch	26	11
8 to 6-inch	28	18
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
4¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¾ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅝-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 inches Wide

Plates less than ¼-inch gage, to and including ⅜-inch; or lighter than 10.2 pounds per square foot to and including 7.65 pounds per square foot..... .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including ⅜-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull material subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c
Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.	

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extras

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared wiht re-entrant angles)

Additional extra ..... .20c

Flexible as a Belt

Positive as a Gear

More Efficient than either

Flexible—it wraps around the large wheel easily—around the small wheel more easily than a belt.

Positive—the teeth in the chain form practically a flexible gear.

Combining the best qualities of the belt (without the slip) and the gear (without the shock), the result is 98.2% (actual test) efficiency, which makes it the ideal drive for machines and lineshafts.

Learn more about it from our Silent Chain Data Book No. 125—Sent on request. Drives from ½ to 10 H. P. carried in stock throughout the country.

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PHILADELPHIA, 2045 Hunting Park Ave.
INDIANAPOLIS, P. O. Box 85
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2727

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J. S. Cothran, 909 Com'l Bank Bldg.
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Whitney Sup. Co. Ltd., 733 Tchoupitoulas St.
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Efficient Silent Chain Drives

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BEARINGS (Journal)
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Keystone Bronze Co., 39th St., Pittsburgh, Pa.

BEARINGS (Motor)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffman Bearings Corp., Stamford, Conn.

BEARINGS (Roller)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffman Bearings Corp., Stamford, Conn.
Timken Roller Bearings Co., The, Canton, O.

BEARINGS (Thrust)
Hoover Steel Ball Co., Ann Arbor, Mich.
Norma-Hoffman Bearings Corp., Stamford ,Conn.
Timken Roller Bearing Co., The, Canton, O.

BELT CEMENT AND DRESSING (Leather)
Williams, I. B., & Sons, Dover, N. H.

BELT LACING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BELTING (Chain)
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

BELTING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BENCHES AND FRAMES (Drawing)
Morgan Construction Co., Worcester, Mass.
Vaughn Machinery Co., The, Cuyahoga Falls, O.

BENDING AND STRAIGHTENING MACHINES
Cleveland Punch & Shear Works Co., 3917 St. Clair Ave., Cleveland, O.
Hinman, D. A., & Co., Sandwich, Ill.
Kane & Roach, Niagara and Shonnard Sts., Syracuse, N. Y.
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
Long & Allstatter Co., Hamilton, O.
Sutton-Abramsen Engineering Co., Park Bldg., Pittsburgh, Pa.

BENZOL AND TOLUOL RECOVERY PLANTS
Koppers Co., The, Union Trust Bldg., Pittsburgh, Pa.

BILLETS (Forging)
Bethlehem Steel Co., Bethlehem, Pa.
Midvale Co., The, Nicetown, Philadelphia, Pa.

BILLETS (Forging, Alloy Steel)
Bethlehem Steel Co., Bethlehem, Pa.

BILLETS AND BLOOMS
American Rolling Mill Co., Middletown, O.
American Tube & Stamping Plant, The, Stanley Works, The, Bridgeport, Conn.
Andrews Steel Co., Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Illinois Steel Co., 208 South La Salle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Interstate Iron & Steel Co., 104 S. Michigan Ave., Chicago, Ill.
Wheeling Steel Corp., Wheeling, W. Va.
Wood, Alan, Iron & Steel Co., Widener Bldg., Philadelphia, Pa.

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